VOL. 171, NO. 3 AMERICAN SEPTEMBER, 1949

Gas Journal

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When you buy Rockwell-Emco large capacity meters you get sustained accuracy and engineered durability. These qualities have been field proven for many years. The *plus* value in these meters comes from *service economies*, made possible by the bowl type body with its removable and interchangeable valve plate mechanism. This exclusive construction brings big savings to big meter buyers. To learn full details, write for bulletin 1003.

PITTSBURGH EQUITABLE METER DIVISION
ROCKWELL MANUFACTURING COMPANY
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Atlanta Boston Chicago Houston Kansas City Los Angeles
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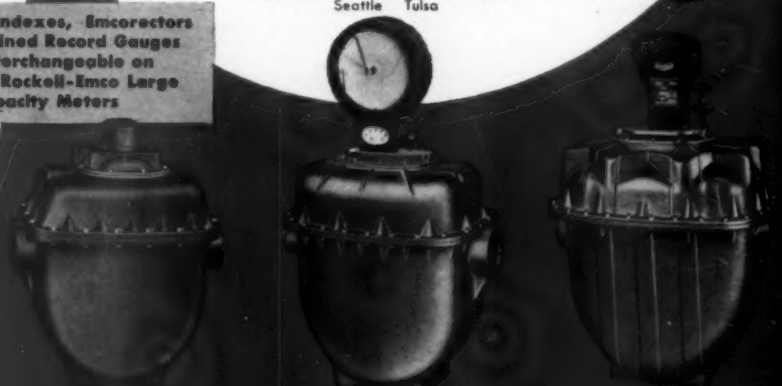
See how this design saves

Illustrating how valve plate casting carrying all working parts may be removed as a unit in field or shop and replaced with a new or reconditioned mechanism that has been previously calibrated for accuracy. Interchanging meter bodies will *not* affect accuracy of the calibrated mechanism.

Standard Indexes, Emcorectors and Combined Record Gauges are Interchangeable on Cast Iron Rockwell-Emco Large Capacity Meters



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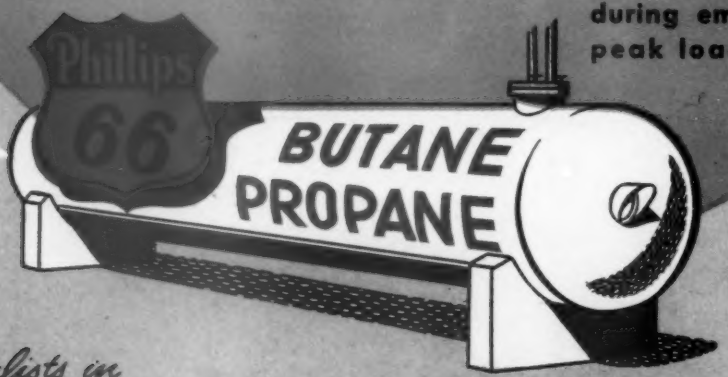
for replacing *all* or *part* of your gas supply on a continuous basis or during emergency or peak load periods.



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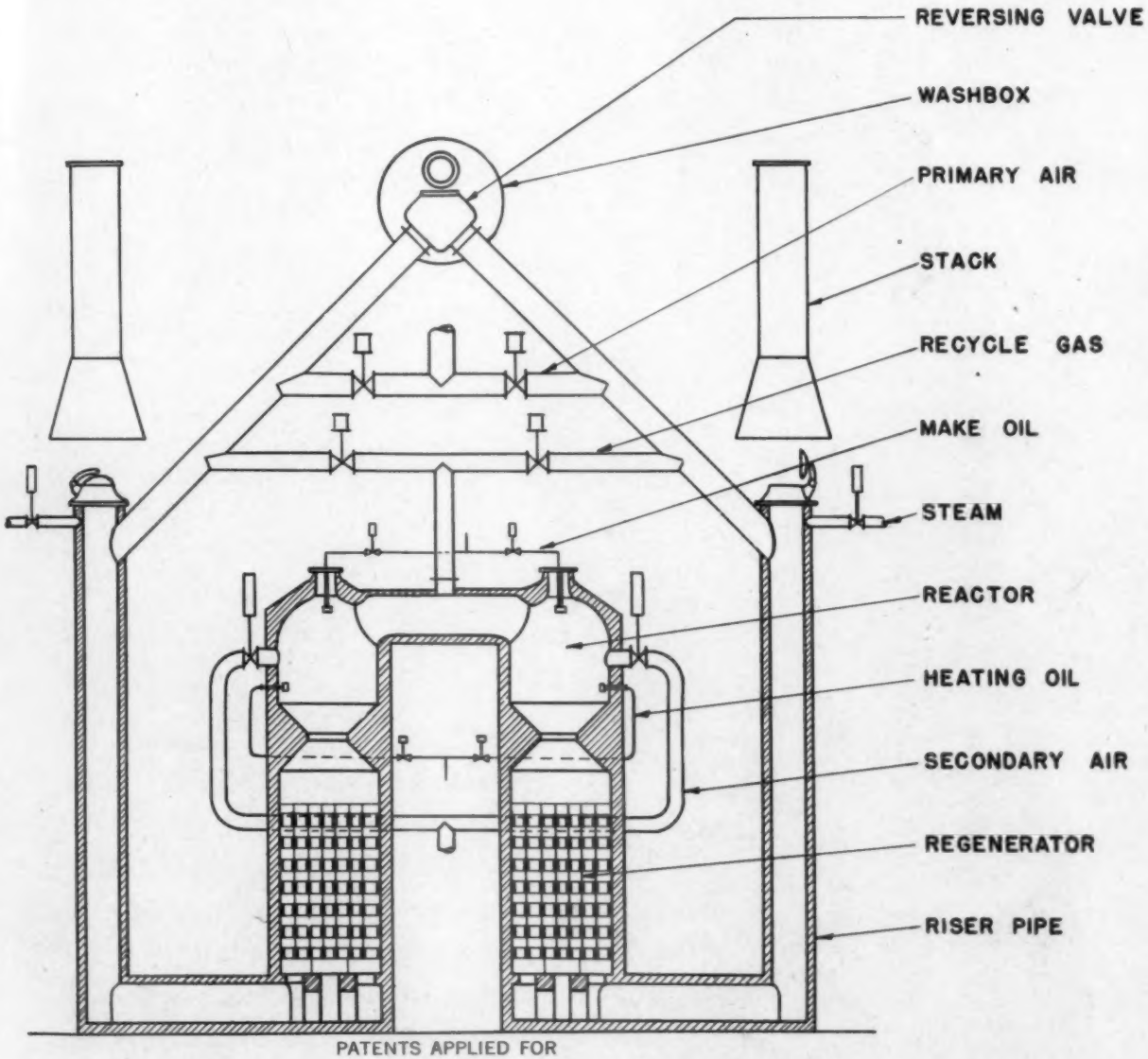
SEMET-SOLVAY REGENERATIVE REVERSE FLOW OIL GAS MACHINE



PATENTS APPLIED FOR

At a time of very high interest in the production of oil gas,
Semet-Solvay announces the development of the

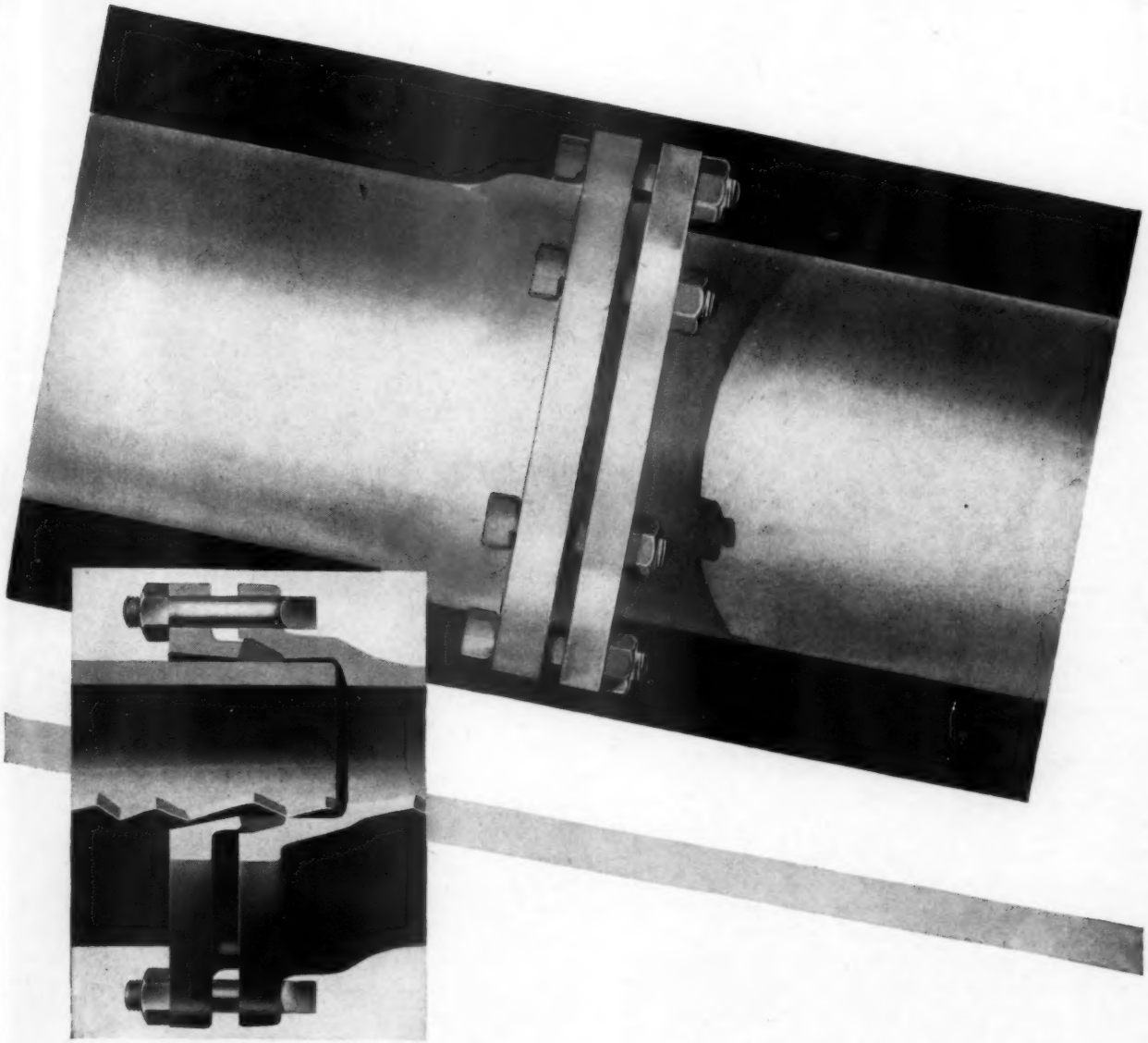
REGENERATIVE REVERSE FLOW OIL GAS MACHINE

This process is adaptable to existing production equipment.

SEMET-SOLVAY ENGINEERING DIVISION
40 RECTOR ST., NEW YORK 6, N.Y.
ALLIED CHEMICAL & DYE CORPORATION

AMERICAN GAS JOURNAL, September, 1949. Vol. 171, No. 3. Published monthly by American Gas Journal, at 34 North Crystal St., East Stroudsburg, Pa., Executive and Editorial offices at 205 East 42nd Street, New York 17, N. Y. Entered as second class matter October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U.S.A.

Nearly a century before mechanical joint cast iron pipe was developed, this 10-inch cast iron bell-and-spigot pipe was laid by the first gas company to be granted a franchise in this country—The Gas Light Company of Baltimore, Maryland. The present company serving that city with a modern distribution system is the Consolidated Gas, Electric Light and Power Company of Baltimore, a direct descendant of the pioneer company. When this veteran 10-inch main was uncovered for inspection on its 100th Anniversary, it was in excellent condition. It is America's oldest gas main, now in its 115th year of service.



Long life and bottle-tight joints—plus time-saving and other economies in laying—plus interchangeable accessories and fittings—are the reasons why important gas utilities are standardizing on standardized mechanical joint cast iron pipe. Cast Iron Pipe Research Association, T. F. Wolfe, Engineer, Peoples Gas Bldg., Chicago 3.

STANDARDIZE ON

CAST IRON

STANDARDIZED MECHANICAL JOINT

PIPE

for the love of Mike, Jr...

all those new parents in your town are good prospects for a Gas Refrigerator

Good leads are mighty precious these days. Finding them means checking all the angles. And here's one of the best—families with new babies.

Before the new arrival came, perhaps they could get along with an old refrigerator - or a small one. Or maybe they managed to get by without *any* automatic refrigeration. But with a new baby, it's a different story. Mom and Dad want to be sure they've got a refrigerator that can be trusted with Baby's formula and his cod liver oil. One that has plenty of room for the six or eight extra bottles. One that doesn't have oranges bouncing out on the floor every time the door is opened. In short, they're ready to lend an ear to a Servel salesman . . . because . . .

Servel has just what these new Moms and Dads want

First, there's Servel's *dependability*. Unfailing protection for milk, vitamins, and every vital food. No chance for an old motor to go on the blink. Second, there's peaceful *silence*. No machinery to rumble on and off. No motor to wear and get noisy. Third, there's Servel's roomy cabinet—with every modern convenience. And finally, Servel is more economical because it *lasts longer*. It has the only freezing system with no moving parts. And that means more years of reliable, trouble-free service. (Plenty important to a young family on a modest budget.)

You'll find a little investigating will help uncover a lot of these valuable leads. Watch the papers. Check with hospitals and county record offices. Then follow through with personal calls. Remember, too, the market today calls for sales promotion. So keep in touch with the Sales Promotion Dept., Servel, Inc., Evansville 20, Ind.

AMERICAN Gas Journal
ESTABLISHED 1859

VOLUME 171 SEPTEMBER 1949 NUMBER 3

This month...

WE DON'T get any great volume of unsolicited mail from our readers; although we may seem prone on occasions to pretend that we do. Occasionally someone writes in and commends us for some improvement or other that has been made in the JOURNAL's appearance or content. We appreciate letters of this kind of course—as a matter of fact we generally have them photostated and pass them around to our advertising solicitors who use them without conscience, as proof that we have the most enlightened readership in the gas industry.

Then there are the brickbat communications that generally start out in a tone of disarming friendship and wind up by raising old Ned with something somebody said in an article in the last issue. The trouble with these is that almost invariably they wind up by saying: "This is for your own information only; please do not print what I have said." What we are really waiting for now is for someone to burn in a fast one and dare us to print it. That will get top billing.

We had a little interior conflict in the editorial department over a suitable heading for the picture story from Philadelphia Gas Works on pages 24 and 25. It was a toss up between "An Inside Job" and "Midgets in the Mains." A sort of craven compromise was worked out by using both. Anyhow, the story is interesting even though the pictures do tend to encourage claustrophobia.

We observe that the date of this writing (August 27) is the ninetieth anniversary to the day of the completion of the first drilled oil well in the world. That, as everybody in the industry knows, was Drake's well, near Titusville, Pa. Less known, perhaps, is the fact that a new publication, AMERICAN GAS-LIGHT JOURNAL was then two months old. That issue was enlivened by a column headed "The Horrors of Burning Fluid," in which the editor took a firm stand against the burning of camphene in the home. But Colonel Drake never got a line.

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Elliott Taylor • Editor

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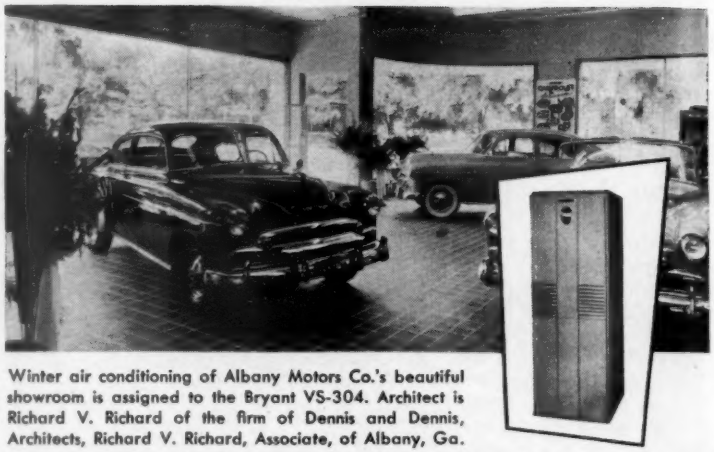
Special Assignment

FOR A TRIO OF EXPERTS

Three types of Bryant equipment, all operated on LP-Gas, provide the heating comfort in this newly completed Albany, Georgia, automobile agency. Showroom and offices are winter air-conditioned. Well-placed unit heaters maintain constant comfort in the large service department and garage. An individual heater, which supplies welcome warmth by both radiation and circulation, guards the comfort of mechanics and other employees in their locker and shower room. It's a case where more than one type of heating unit is needed to provide adequate heating, efficiently and economically.

When your heating job requires diversified equipment, specify *all* your needs from the most complete line of gas heating equipment in the nation—the Bryant Line. You get uniform quality in every type of unit, and you're sure of *expert* performance, on any gas, for every Bryant unit is experience-proved. Your Bryant Distributor stands ready to help you select the units that will help you sell your job.



Winter air conditioning of Albany Motors Co.'s beautiful showroom is assigned to the Bryant VS-304. Architect is Richard V. Richard of the firm of Dennis and Dennis, Architects, Richard V. Richard, Associate, of Albany, Ga.

Bryant Model US-322 Unit Heaters get the call for the job of heating Albany Motors' vast service department and garage, part of which is shown above.

Expert on body comfort is the Bryant Model VC-426 Radiant Circulating Heater, installed in employees' locker and shower room. Heating Contractor for Albany Motors Co. building is Vance J. Law of Consumers Gas Company, Albany, Georgia.

Let the pup be furnace man . . . and water boy, too!

bryant

AUTOMATIC HEATING

BRYANT HEATER DIVISION

Affiliated Gas Equipment, Inc.

Cleveland, Ohio • Tyler, Texas

THE MOST COMPLETE LINE OF GAS HEATING EQUIPMENT IN THE NATION

Editorial:

End of An Era

MUCH is being made of the conversion, now in process, whereby the New York and Richmond Gas Company, serving one of the boroughs of New York city is going from the delivery of manufactured to the service of straight natural gas to its customers. And rightly so. For the conversion of this company, comparatively small though it is beside the metropolitan giants that serve the adjacent boroughs, marks the end of an era.

It is a token indication of the economic inevitably of natural gas in any area of sufficient population concentration to justify the major pipe lines necessary to carry it. It marks the last resting place of the hopes of those who sought, through political manipulation, or covert financial resistance, to preserve the greatest of all gas markets exclusively for the coal industry. It is a vignette on the illuminated history of labor's determination to price the product of the mines out of the market. It is the final *fait accompli* that refutes the doleful doubts of every timorous soul that predicted it never would be feasible.

Staten Island in the last few weeks has become a mecca for gas operating men from Florida to New England. One might honestly inquire: Why all the sudden interest? Conversion to natural gas is nothing new. Denver, San Francisco, Los Angeles, St. Louis, to name only a few, have all gone through the same transition. Tens of thousands of words have been written, covering every detail of every problem encountered. The answer is, that to eastern gas men the problems of conversion have suddenly assumed a new and immediate significance. What was once only a matter of academic engineering interest suddenly looms as the technical blueprint of tomorrow's operation.

Whether every company in the new area of natural gas invasion will eventually go into the distribution of straight natural gas cannot be accurately predicted. The maintainance of economical load factors on the lines now operating, as well as those building and to be built, will have to be a subject of observation under operating conditions. It is our opinion that few if any of the companies that now regard natural gas solely as an enriching agent will long hold to that theory. We have observed that manufactured gas companies in almost every instance have tremendously underestimated the increased load that the introduction of natural gas would add, almost without effort, to their total sendout. A higher Btu average for every expanding system appears to be inevitable, if for no other reason than that it increases the effective capacity of existing distribution systems.

Lower costs will be reflected in lower gas rates and greater consumption. The New York and Richmond bowed gracefully to the inevitable by announcing proposed rate reductions simultaneously with the release of the news that its connection with the Texas Eastern Transmission line was ready for service.

The problems posed by the introduction of natural gas into the greatest market that it has ever served will be many. But the fact that they are now immediate problems, and that they are being met by the best engineering and managerial talent that the industry has ever produced augers well for the gas industry of the Atlantic seaboard, and for the public that it serves.

A Matter of Facts

RISING, rational and serene, above the flood of literary effluvium with which trade associations are wont to assail the public prints, we commend in terms of highest approbation the 1948 Edition of *Gas Facts*, product of the American Gas Association's Bureau of Statistics.

Ostensibly it is not—nor was it intended to be—an easy reading volume for the careless consumption of the lay reader. Yet its 240 pages of charts, tables, graphs and maps do exert a certain reader fascination. It is an appeal akin to that of a good dictionary or of a scholarly and exhaustive encyclopedia. Innocently we pick it up in search of one single fact with which to authenticate some vague and half forgotten impression of industry information. Beguiled, and perhaps surprised, by the ease with which the elusive truth can be found, we find ourselves ambling leisurely through page after page of data that we had never expected to encounter, and that we shall probably promptly forget.

Yet the impression remains, and that is important, that here the facts can be found; and the masterly conception and workmanlike quality of their assembling invite further consideration of their implications. Here is the record of an industry grown unbelievably great within the span of one generation's recollection. It is a record of adaptation to change that would have appeared incredible twenty-five years ago.

And perhaps most significant of all, the stark statistics upon which *Gas Facts* is built constitute an infallible indication that the achievements of the past are only minor milestones in comparison to the monument to public service that the gas industry has yet to build.

Elliott Taylor

Advance Organization; Detailed Planning Speed Staten Island Conversion Job

by Richard A. Plata

and

Joseph Ferrarini

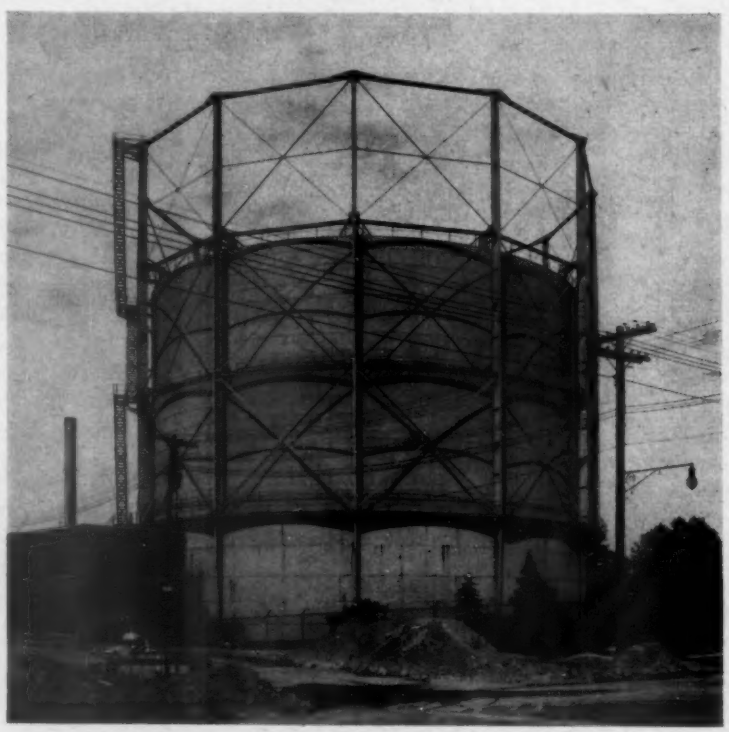
"OPERATION Goldfish Bowl" started on Staten Island, N. Y., on August 23. That was the day when natural gas invaded New York City, and for the first time in history a portion of the population of the world's greatest metropolis began using straight natural gas.

The New York and Richmond Gas Company, which serves Staten Island, properly considered this an important undertaking and took every possible step to hedge against unnecessary customer inconvenience while gas appliances are being converted. Company officials realized the necessity for extremely specific instructions to customers; and letters, folders, and newspaper advertisements were couched in most precise terms.

The company also realized that the conversion of appliances to the use of natural gas was a golden opportunity to get pertinent data about the appliances on its lines. Here was the chance to find out the approximate age, type, and size of each appliance, how it was installed and vented, and whether or not it was equipped with automatic controls.

The conversion job, which is being handled by Conversions and Surveys, Inc., a subsidiary of Stone & Webster Service Corporation, is being watched by many other gas companies. Engineers from other gas utilities have already appeared on the scene to observe how the work is handled, and virtually every gas company from Maryland to Maine has indicated that they will send representatives before the conversion job is completed in November.

This interest is quite understandable, since it is a major operation to convert the appliances served by 39,000 meters, and interest is further heightened because so many companies in the east will be converting to higher Btu gases within the next few months.



Historical Note—This is the first gas holder in the metropolitan area of New York to store natural gas. It is situated at Mariners Harbor, Staten Island.

Mr. Plata is the assistant manager of the new business department of the New York and Richmond Gas Company, which serves Staten Island, and Mr. Ferrarini is assistant to the President of Conversions and Surveys, Inc.

Needless to say, New York and Richmond officials and engineers are pleased with the outside interest in the project, and are doing everything they can to cooperate in what they informally term the "goldfish bowl" aspects of the conversion.

300,000 Burner Changes Are Involved

The change from the distribution and sale of a 537 Btu gas to a 1030 Btu gas makes it obligatory to change every appliance of every customer. In the case of Staten Island, it is estimated that approximately 300,000 individual burners will have to be adjusted. On the Island the average appliance saturation is estimated at 1.5 per meter. There are 720 customers using gas for domestic and commercial space heating, and there are 5,500 gas refrigerators.

To finance the costs of the changeover, the New York and Richmond Gas Company received Public Service Commission authorization to issue $750,000 of serial notes to mature in 1957.

Conversion work started August 23, and it is expected that the entire system will be served with natural gas by November 15.

Fogging of the natural gas was started immediately, and the odorizer used is a mixture of the heavier mercaptan series. There was no change in pressure at the customers' burners.

Planning Started Early

Before giving a "blow by blow" description of what is happening on Staten Island, we would like to emphasize as strongly as we can two important factors in a conversion job. These are—*safety, and customer convenience.* This means that *careful advance planning* is a definite requirement. In the case of Staten Island, that planning of the proper handling of the physical aspects of the conversion job was started immediately after the decision to turn to straight natural gas.

The first step was to make a complete survey of every commercial and industrial installation on the company's lines. Early in the summer ten men started out visiting the 400 customers in this classification.

They determined the types of appliances each customer was using. Then they estimated the number of man-hours it would require to convert the burners, and also the hours during which the conversion work could be done without interferring with the normal business routine of the customer.

With this information it was possible to make out conversion orders well in advance of the day that natural gas service was inaugurated. A further advantage of this advance survey of commercial and industrial appliances is that any undersized boiler equipment can be discovered.

Another reason why advance planning is absolutely necessary is to make sure that all materials which are required are on hand. In the case of the New York and Richmond Gas Company some of the things which had to be ordered, secured and stored were:

700 dozen twist drills, from drill sizes 1 to 80
300,000 adapters for changing orifice size
10,000 aluminum inserts for domestic ranges
300,000 various sizes of plug caps
2,000 jets for water heaters
5,000 Rutz pilots
500 cans of penetrating oil
5,500 refrigerator burners
500 bars of soap

Naturally, there were thousands of other individual things to have on hand before the actual work of converting appliances could begin. It is estimated that purchases of miscellaneous conversion materials and supplies for this job will be about $35,000 with an additional $15,000 for tools.

The changeover is being made by sections or districts of the area served. The system has been divided into 25 districts, averaging approximately 1,600 customers per district. However, some districts have only about 1,000 customers, while others have as many as 2,000 customers. As for time of conversion—16 of the districts will require up to three days each, and nine will take up to two days each.

Texas Eastern Transmission Corporation is supplying natural gas to the New York and Richmond Gas Company. A 12 inch line was built from the terminus of the Big and Little Inch pipe lines at Linden, N. J., to where New York and Richmond takes the gas at a point directly under the Goethal's Bridge, which connects Staten Island with New Jersey. From

These two pictures are by courtesy of the *Staten Island Advance.*

The picture at the top shows a member of the New York and Richmond's conversion crew working on one of the first gas ranges to be converted to natural gas on Staten Island. It is in a home in the Mariners Harbor section.

Pictured at the bottom are conversion workers tackling a furnace in the Mariners Harbor shipyard of the Bethlehem Steel Co.

For a conversion job it is necessary to set up a supply store room for thousands of different parts required

there New York and Richmond has recently completed 9,900 feet of main (8″ and 10″) running to its holder station at Mariner's Harbor. The gas holder is about seven and one half miles from the company's manufacturing plant which will be converted to produce 1,000 Btu oil gas.

On August 22 the holder at Mariner's Harbor was purged with natural gas and then filled with natural gas. At 5:00 A.M. on August 23 the distribution system in district 1 was valved off and purged with natural gas. By 7:00 A.M., it was filled with natural gas, and a total of 16 crews went to work converting the appliances of customers in that district. There were a total of 1456 customers with about 10,000 burners to be converted. Work in the district was completed by six o'clock August 25. District by district this procedure will be followed until the last one has been converted.

Conversions and Surveys has about 250 men on the Staten Island job. There are 16 crews, which operate 10 men to a crew with a foreman. A complete breakdown of the manpower is given elsewhere on this page.

Starting at 7:00 o'clock on the morning that a section is to be converted, the men go to each house in the district, make a survey of all appliances, turn off all automatic equipment, and instruct the customer in the use of the top burners of the range. Then they report back to the dispatcher's office, where conversion orders are made up and the conversion men routed throughout the district. Separate orders are issued for conversion of a refrigerator, and also for conversion of a house heating furnace or boiler, since these are handled by specialists.

Prior to August 22 all conversion men "attended school" for a week, learning about the policies of the New York and Richmond Gas Company, the rules and regulations of local ordinances, etc.

On Staten Island the company estimates that the time for converting domestic appliances will be a minimum of one major appliance an hour.

As stated, the company was extremely explicit in the information it gave to customers and the public. It pointed out that the changeover of appliances was necessary because the company was going to distribute and sell a gas of 1030 Btu content and a

MEN AT WORK

Manpower on the Staten Island conversion job consists of:

160 domestic and commercial adjusters	4 for accounting and payroll purposes
10 house heating adjustors	30 refrigerator adjustors
10 servicemen handling complaints	1 utilization engineer
19 foremen	2 field supervisors
8 dispatchers	1 field engineer
4 for delivery of handbills to customers	1 job superintendent
2 handling stores department	1 field clerk
	2 mechanics for mobile shop truck (telephone equipped)

specific gravity of 0.60, instead of a gas of 537 Btu and a specific gravity of 0.65.

An important step on the part of the company was to notify all manufacturers of appliances of the change to straight natural gas. They also notified distributors, dealers and department stores in the immediate area.

The following letter was sent to all appliance dealers on Staten Island:

"Recently you were advised by this company of the changeover from the distribution of manufactured gas to natural gas.

"Because of the higher Btu content of the natural gas and its different burning qualities, it becomes necessary to make certain changes to all manufactured gas designed appliances. These changes may embody reducing the size of the orifice, either by replacing the complete orifice or adapting the existing one, increasing the port area of the burners by drilling, replacing existing pilot tips and perhaps other changes.

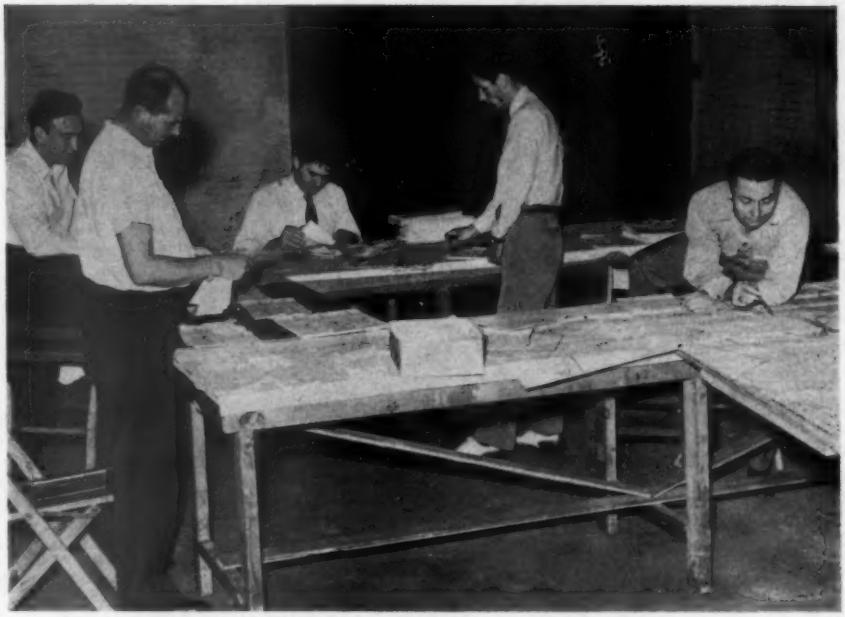
"Upon the completion of converting the appliances in service it is our desire to assist our dealers convert their stock of appliances in warehouses and on showroom floors.

"To facilitate this changeover, we recommend that the following procedure be followed:

1. List the appliances in inventory as of September 15, 1949 and forward a copy to us. Include name, address and location of warehouse and/or showroom.
2. Make equipment available for this changeover. Sorry, we cannot uncrate or recrate any equipment.
3. The changeover will be made without cost provided same is done before December 31, 1949.
4. Changeovers required after the above date will be charged for at regular rates.

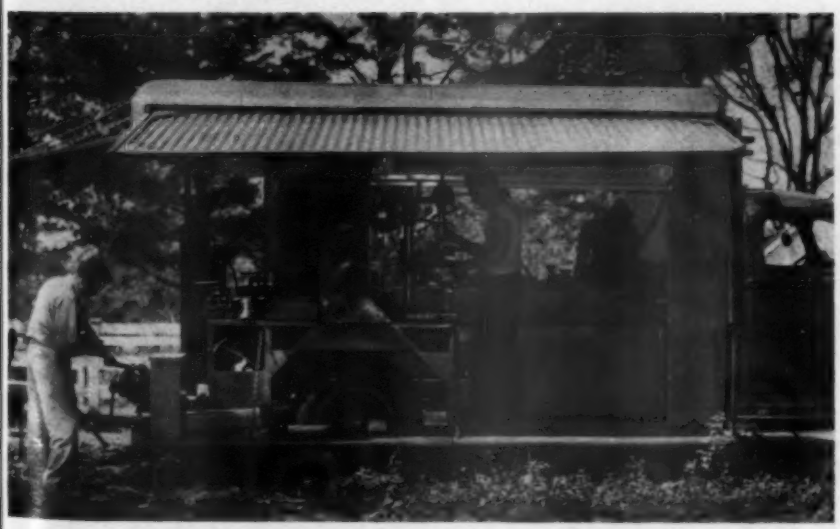
"Your cooperation in this effort will be greatly appreciated."

All servicemen of New York and Richmond are to be trained in the conversion of burners to utilize natural gas. There will probably be quite a bit of activity along this line, since families who move to Staten Island from Manhattan or Brooklyn will bring along appliances fitted for manufactured gas.



The dispatcher's office on a conversion job is a very busy place.

Below is the mobile machine shop which is now working on Staten Island. It is telephone equipped. Above are shown the tools which members of conversion crews take with them.



The major problems of converting a gas system to a fuel of a different heating value are summarized as follows: Determining best procedures for making the conversion, ordering materials and tools, setting up training schools and store rooms, and developing advertising and publicity material to notify customers of the change and the part they will have to play.

At present special rates are in effect for the transitional period during conversion. The New York and Richmond Gas Company has filed suggested permanent rates for natural gas with the Public Service Commission. The company has stated that the new rates will be "somewhat less" than the manufactured gas rates, and that "the switch to natural gas initially will probably save Staten Island customers about $200,000 a year."

The contract with Texas Eastern will give New York and Richmond Gas Company up to 4,000,000 cu. ft. of natural gas daily, equivalent to about 8,000,000 cu. ft. of manufactured gas. Demand on Staten Island has varied from 3,000,000 cu. ft. to 6,500,000 cu. ft. daily of 537 Btu gas.

When converted to the manufacture of 1,000 Btu oil gas, the company's three sets of generators will each have a daily capacity of 2,900,000 cu. ft.

The use of natural gas by New York and Richmond will supplant the use of 32,200 tons of coal and coke, and 5,636,000 gallons of oil.

Blasting up ahead on 25-mile Dallas loop line now under construction.

Rock and shale indicate character of terrain requiring much blasting.

Step by Step Action Along Lone Star Dallas to Fort Worth Line

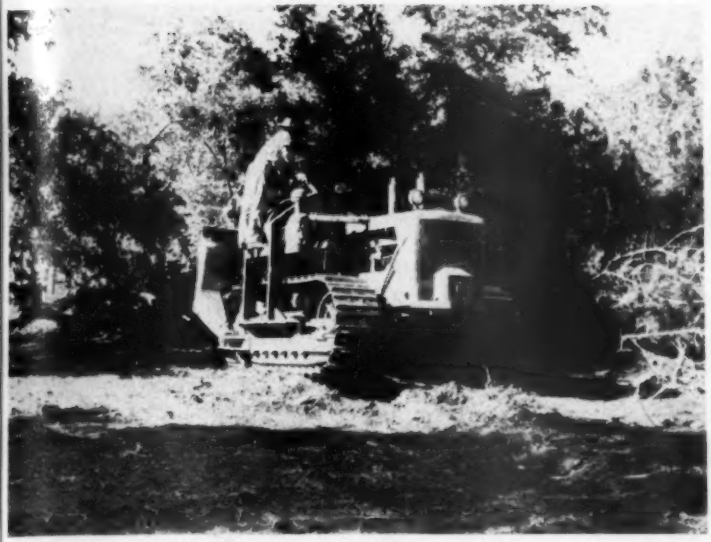
Photographs courtesy of The Blue Blaze, Lone Star Gas Co., Dallas

Special pipe clamp fitted inside each joint as sections are brought together for tack welding.

Tack weld holds edges true until finish welds are completed. Sometimes edges must be trued with cutting torch.

Tar-coated skids are used to hold the line up off the ground, before lowering into ditch.

Large ditcher rumbles along through heavy rock formation, previously blasted.



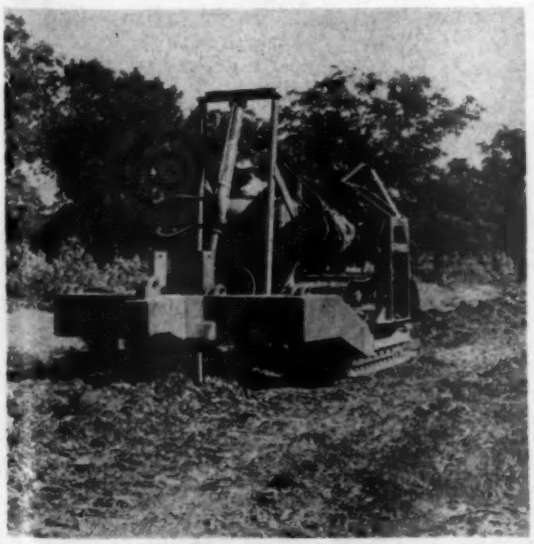
Tractor mounted rooter is used as a bulldozer to push large trees out of the way, prior to cutting.

Map reading is certainly a "must" on the 20 in. Dallas loop line.

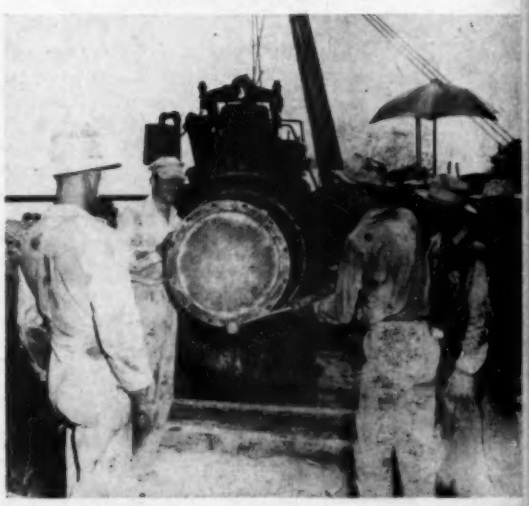
Wrapping machine uses four rolls of paper instead of two, which speeds the work. Undercoating is Kraft, and outer coating is pipe line felt.

●

The wrapping crew puts a "night cap" plug on end of line to keep dirt and animals out as wrapping machine gets under way.



The three illustrations on the left are of a new rooter, called a "plow" by pipe line men. Tractor mounted, the rooter has two 42-in. blades for cutting a path ahead of the ditcher. Steel blades are 10 in. wide and two in. thick. The bottom picture shows blades dug into soil and tractor in action.



Accelerated Transmission Activities Draw Financial Spotlight

by John F. Falvey

This month Mr. Falvey brings to AMERICAN GAS JOURNAL *readers subjects as topical as they are diversified. They range from stock yields to pipe line competition and investment trusts. — Editor.*

Pipe Lines Compete for New Markets

NOW that steel for pipe, compressors and other equipment going into the construction of natural gas pipe lines is available in quantity, transmission companies are aggressively on the hunt for new markets to serve.

This conclusion applies equally as much to lines already in existence as to those which are seeking Federal Power Commission certificates.

Panhandle Eastern Pipe Line Co. is making every effort to keep its Detroit market in competition with the soon to go into operation Michigan-Wisconsin Pipe Line Co., to whose subsidiary (Michigan Consolidated Gas Co.) Panhandle now supplies 125 million cu. ft. of natural gas a day under contract expiring at the end of 1951. Panhandle can continue supplying a substantial proportion of this amount of gas for resale in the Detroit market through the facilities of Michigan Consolidated Gas, but wants direct access to the industrial market through its own facilities.

The highly promising New England market is another which is sought after by more than one company. Transcontinental Gas Pipe Line Corp. and Tennessee Gas Transmission Co., acting in concert, have caused Northeastern Gas Transmission Co. to be formed, hoping to supply this market. Transcontinental now has its Louisiana to New York line well under way and Tennessee has just received FPC sanction to stretch its lines to Buffalo.

Minute Man Natural Gas Corp., another new proposed entity, has its eyes focussed on this same market.

Nowhere is the corporate rivalry to service the same markets more acute, however, than in the effort to bring

(Continued on page 16)

Natural Gas Seen As N.E. Salvation

INTRODUCTION of natural gas, which has proved a life saver to manufactured gas companies in all other parts of the country, appears necessary to insure a really adequate rate of return for companies serving the New England area.

Plans now are under way to connect New England with the southwestern gas fields by the time the 1950-1951 heating season rolls around. But before that time arrives, further trying months may be in store for the region. This is indicated in the recent remarks of Halfdan Lee, President of Eastern Gas & Fuel Associates.

Rate increases granted utility companies in the system now are beginning to provide more revenue, but this is only partially offsetting unfavorable factors, Mr. Lee said, as he cited the adverse effects of the lowering rate of industrial activity in the area.

Mr. Lee's remarks may be considered apropos in view of the fact that his company controlls the $60,000,000-odd Boston Consolidated Gas Co.

Efficacy of rate increases is shown in the record of the straight manufactured gas operating subsidiaries of New England Electric system. Although the units in this system are relatively small, and costs consequently are somewhat higher than normal, they afford a fairly accurate yardstick of

(Continued on page 16)

Investment Trust Gets Good Start

GAS Industries Fund, Inc., first fund organized solely to invest in securities of companies allied with the gas industry, has successfully completed its financing and has its investment program well under way.

The Fund has sold the entire 400,000 capital shares which it offered on July 14 at $16.25 a share through an underwriting and selling group headed by White, Weld and Co. The underwriting and selling group terminated on August 4 and from the sale the Fund received net proceeds of $6,012,000 after commissions and other expenses.

Under the terms of the underwriting agreement, members had the opportunity of taking down an additional 10 per cent of their commitment or of presenting to the company for repurchase 20 per cent of their commitment on August 4. Gas Industries Fund reports that no underwriter exercised its put-back option and, as a result, not a single share was offered to the company for repurchase.

On August 5 the continuing selling group headed by Colonial Associates, Inc., became effective for the sale of the Fund as an open-end investment company and, also on this date, Colonial Management Associates, the investment adviser, started the Fund's investment program.

To date four purchase commitments have been completed, two of them special private placements. The Fund has purchased $200,000 face amount of Sterling Oil & Refining Corp. 4½ per cent Income Sinking Fund Debentures, due 1963, each $1,000 debenture carrying warrants to purchase 26 shares of common stock at $42.50 a share until Sept. 1953 and at $52.50

(Continued on page 16)

Index of Yields : Selected Utilities Stocks

MARKET prices for all groups of stocks making up the AMERICAN GAS JOURNAL index showed further improvement in August. This was in line with market experience for all stocks in the utility classification.

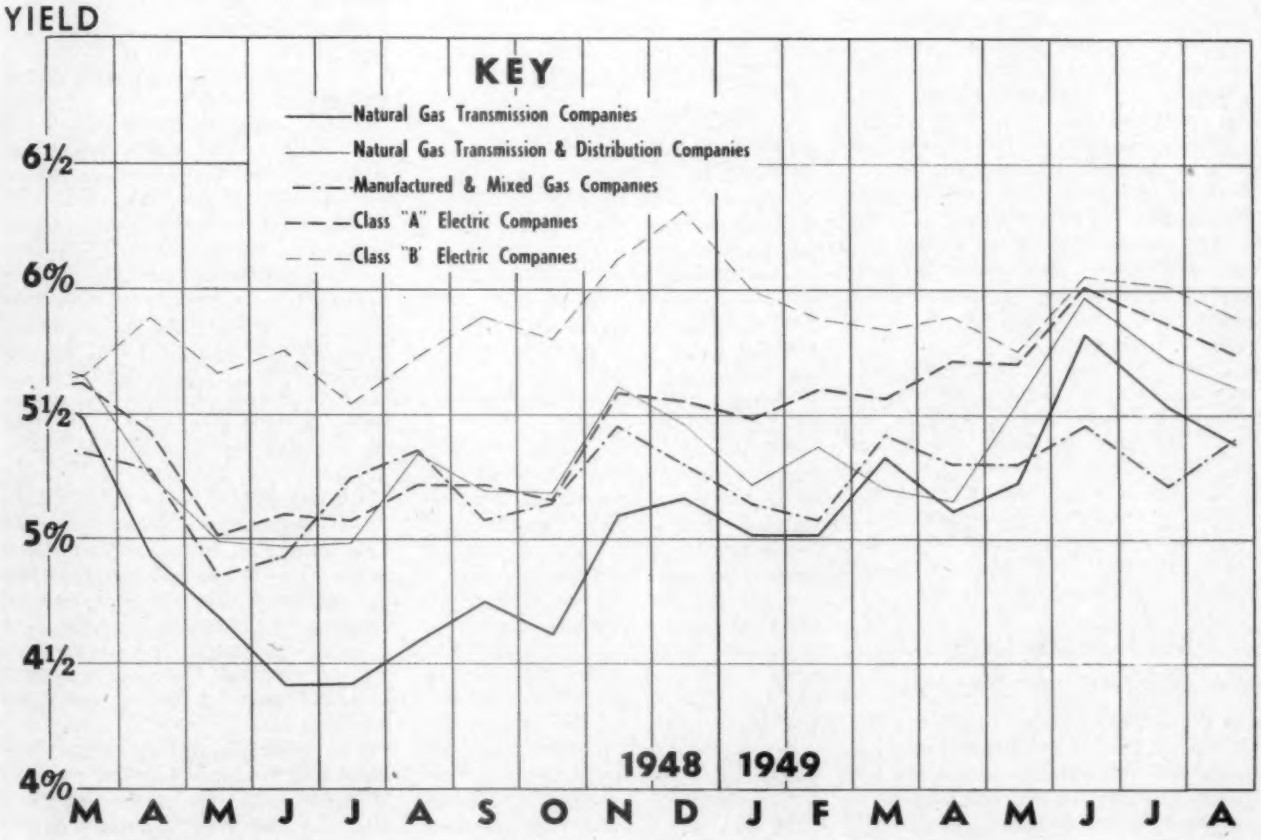
Although the yield shown for the manufactured and mixed gas company group increased at the latest date, this development reflected the action of Brooklyn Union Gas Co. directors in raising the dividend rate to 40 cents a share for the third quarter of the year, compared with 25 cents a share paid in each of the first two quarters. This group of stocks showed a market gain of close to six points during the month but this advance failed to absorb the increase in dividend payments by the Brooklyn company.

The most important recent development from the standpoint of gas industry financing has been the continued improvement in the Government and corporate bond market. Paced by an increase of around 2 to 2½ points in Government obligations, the corporate bond market during recent weeks has given a good account of itself, justifying utility managements in considering advisability of refunding some of their companies' outstanding issues, as was stated in this column last month.

Attesting to the strength of the corporate bond market was the sale on August 23 by Northern States Power Co. of Minnesota of $15,000,000 of 30-year first mortgage bonds at a price to the underwriters of 101.265 for a 2¾ per cent coupon, with the issue going to the public at 101¾ to yield 2.665 per cent.

For a high grade (AA) issue the bonds sold on a lower yield basis than had been anticipated. This was traceable to a number of factors. The underwriters at the time of the offering did not have much inventory on hand. As a result they "reached" for the issue in the expectation that the market for high grade bonds would continue to improve.

Some of the leading investment advisory organizations express mixed re-



Method of Compiling Index of Yields

This is a straight arithmetical index of comparative yields obtainable on a selected group of gas and electric utility industry common stocks.

The companies comprising this index have been selected by the AMERICAN GAS JOURNAL as providing a representative cross-section of each industry, from the standpoint of geographical diversification and of the relative importance of the individual companies in their areas.

No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because the yields afforded on the issues reflect such changes. The index is designed to show the rate of return and not necessarily market movements of the stocks comprising it.

The companies used in compiling this index are:

Natural Gas Transmission Companies: El Paso Natural Gas Co.; Northern Natural Gas Co.; Panhandle Eastern Pipe Line Co.; Southern Natural Gas Co.; Tennessee Gas Transmission Co.

Natural Gas Transmission and Distribution Companies: Columbia Gas System, Inc.; Consolidated Natural Gas Co.; Lone Star Gas Co.; Oklahoma Natural Gas Co.; Pacific Lighting Corp.

Manufactured and Mixed Gas Companies: Bridgeport Gas Light Co.; Brooklyn Union Gas Co.; Laclede Gas Light Co.; Peoples Gas Light & Coke Co.

Class "A" Electric Companies: Boston Edison Co.; Commonwealth Edison Co.; Houston Lighting & Power Co.; Southern California Edison Co., Ltd.

Class "B" Electric Companies: Dayton Power & Light Co.; Hartford Electric Light Co.; Pennsylvania Power & Light Co.; Public Service Co. of Colorado; San Diego Gas & Electric Co.

actions to the low yield at which the Northern States bonds were sold. Some of these organizations state that they were prepared to advise buying the bonds at around a 2.68 per cent basis, while others would not go below a 2.70 per cent basis.

Despite the difference of opinion as to the way the issue should advantageously be bought, however, all are in accord that the winning syndicate would not lose money on the issue.

All sources close to the bond market believe that it will stay good and that further improvement will be shown. They expect further improvement but believe that it is too much to expect that yields will go anywhere near as low as the 2.39 per cent minimum set by Madison (Wisc.) Gas and Electric Co. in February, 1946, when it brought $4½ million 30-year 2½ per cent first mortgage bonds to market.

One direct effect of improving bond market prices has been the widening of the spread on yields obtainable from utility bonds and stocks. This is unusually wide at present. High-grade bonds now yield from 2.60 per cent to 2.80 per cent and good grade common stocks yield approximately 6 per cent.

The normal expectation is that this spread eventually will narrow but such a development may not come about immediately in the view of many qualified observers.

One development, for instance, which conceivably could delay narrowing of the very wide spread in the yield afforded on utility bonds and stocks would be issuance of a large amount of new common stocks by the utility companies. Such new stock would have to be absorbed before the yields afforded on the common stocks could follow the expected pattern.

Natural Gas for N. E.

(Continued from page 14)

the trend of developments in the region.

With the aid of somewhat more than $1,000,000 of rate increases annually, practically all of which will have been reflected in operations by the 1949 year-end, official estimates are that the system gas subsidiaries will earn only slightly more than 4 per cent on their combined rate bases for the full year. This would compare with approximately 1.79 per cent actually for 1948.

Indications are that natural gas can be laid down at the city gates in New England at a price of about 37 to 40 cents per 1,000 cu. ft. This is believed to be less than half the present cost of manufacturing gas in the area, before making adjustment for the fact that the natural gas has approximately double the heating content of the manufactured product.

Gas making oil prices are now showing a tendency toward higher levels. But even if this trend should not be continued and prices are stabilized around their present mark, substantial savings eventually will be realized by the New England gas companies through substituting natural gas for oil either as an enriching medium or as a feed stock.

Through use of a portion of the natural gas for boiler fuel the electric utilities in New England also should realize fairly large savings.

For all of the utility companies—both electric and gas—these potential operating cost savings conceivably might equal the $7,500,000 to $8,000,000 annual economies anticipated by the New York City area utilities when natural gas comes their way late next summer.

Pipe Lines Complete

(Continued from page 14)

natural gas to Richmond, Norfolk and Southeastern Virginia communities. No less than four separate and distinct applications now are before FPC for this purpose.

First applicant for this Virginia market was Piedmont Natural Gas Corp. It filed originally on August 24, 1948, (Docket #G-1105) and amended its application last April 5. Just recently it was given 30 days in which to bring its application up to date.

On two successive days two new applications were filed for the purpose of serving the same market. Virginia Natural Gas Co. filed on July 18 (docket #G-1241) and Commonwealth Natural Gas Corp. followed suit on the 19th (docket #G-963). These two applications are similar in scope, with the one exception that Virginia Natural excludes the city of Charlottesville and the Allied Chemical and Dye Corp. Solvay Process Division in Hopewell, both of which are sought after by Commonwealth.

Further swelling the field is Eastern Gas Co. whose recent application (docket #G-1259) covers pretty much the same territory as the other applications.

Commonwealth estimates its gross revenues for the first year at $4,221,300 and for the fifth year at $6,149,700. It estimates net income for the first year at $289,600 and for the fifth year at $511,500.

It expects the rate of return, evidently, to go from about six per cent to 12 per cent during the five year period.

Virginia Natural Gas Co. estimates its gross earnings for the first year at $4,539,900 and for the fifth year at $6,205,970. It estimates net income for the first year at $310,520 and for the fifth year at $447,549.

A rough check indicates that the rate of return might be expected to go from 5.77 per cent to approximately 9.5 per cent.

Estimates of gross revenues and of net income have not been made available by Piedmont or Eastern.

Investment Trust Starts

(Continued from page 14)

a share for an additional five years. There are only $2.5 million of these debentures and 80,000 shares of common stock outstanding. Through this debenture the Fund is secured by extensive reserves of oil in the ground, obtains a moderate income, and has the opportunity of capital appreciation through the warrants if the Sterling company's operations in gas production are as successful as anticipated.

After the Fund's purchase of these debentures, Tennessee Gas Transmission Co. announced that it had sold the assets of its wholly-owned subsidiary, Coast Company, for 40 per cent (53,333 shares) of Sterling Oil stock. This immediately improves the position of the debentures.

The Fund has agreed to purchase at $250,000 from insurance companies, or at $100 a share, 2,500 shares of El Paso Natural Gas Co. 4¼ per cent Second Preferred stock which is convertible in perpetuity into common stock at $25 per share. This just about equals the current market price of the El Paso common.

In addition, the Fund has bought 15,000 shares of Transcontinental Gas Pipe Line Co., and 25,000 shares of Texas Gas Transmission Corp. For the latter purchase, the Securities and Exchange Commission gave the Fund a special exemption from restrictions in the Investment Company Act which otherwise would have prevented this purchase.

The investment policy of the Fund is to acquire a portfolio of securities identified with the gas industry that yield an income sufficient for the investor to carry his commitment, and which offer real chances for capital appreciation.

The management of the Fund states that it intends to go slowly in investing the $6 million available in order to have time to acquire positions at the right prices and only after very thorough and detailed study.

Until the investment program of Gas Industries Fund, Inc., is further along, no definite indication can be given as to the probable time or size of dividend payments likely to be ordered by directors.

Blissful Ignorance Can be Folly In Floor Furnace Venting

by Carl H. Dean

Director of Education, Domestic Heating Division, Stewart-Warner Corp.

Carl H. Dean

THE floor furnace has been the victim of fantastic methods of venting. There are several reasons for this, one being that there are few comprehensive specifications enacted into enforcible regulations covering the installation of floor furnace venting.

This is the third of a series of commentaries on venting problems which Mr. Dean has prepared for AMERICAN GAS JOURNAL. *The articles published to date have been productive of some vigorous comment, pro and con, from readers of this publication. In his fourth and last installment, scheduled for the October issue, the author will sum up his own conclusions, and comment on the views concerning his articles that have been forthcoming from readers of* AMERICAN GAS JOURNAL.—EDITOR.

It is not the purpose of these articles to pass on the merits or demerits of any type of heating or any types of heating appliances. However, we consider it appropriate to pause a moment to pay tribute to the floor furnace. To hundreds of thousands of customers the floor furnace has brought a higher type of heating and comfort than they had ever before experienced or could expect to afford. Moderate in cost, inexpensive to install, economical in operation, not subject to shut down by power failures, most of the installations are in houses without basements. Consequently they are unaffected by negative interior pressures in the home and should be easily vented. The limitations of the unit are well known and can be guarded against. The misapplications are not the fault of the floor furnace. Short sighted self-interest or lack of knowledge on the part of the salesmen and installers is to blame here.

There are territories where these misapplications and inadequate methods of venting have built up local prejudice to the extent that, unless corrected, floor furnace may become extinct. As extinct as the pipeliness furnace which fell victim to dealer and installer methods. The floor furnace is a dependable load builder worthy of the industry's best efforts for protection. The modern floor furnace is a far cry from some models of the early twenties, when reputable manufacturers found themselves in competition with tin-shop products of 26 gauge black iron formed on a cornice brake with ends double seamed over a mandrel or square head stake and equipped with a mail-order range burner. No pilot, no regulator, no draft diverter—a fire and asphyxiation hazard. The merits of any appliance which can survive such a beating must be recognized. The perfected units are now taking a beating from the installers' methods of venting.

In the early thirties the large insurance companies found themselves with thousands of houses on their hands in natural gas territories where speculative builders thought that a heating system was provided when they piped the house for gas with an outlet in each room. A five room house would then be equipped by the purchaser of the property with unvented space heaters with combined capacity of upwards of 100,000 Btu per hour and that was that. These companies were often surprised to find that they had to redecorate the houses each spring in order to hold tenants. The windows sweat and the sash rotted. The doors and floors warped and swelled. The walls and ceilings sweat. Many people left some windows open from the top all winter.

Here the advent of the floor furnace was most welcome. Carloads of them were installed. The houses stopped sweating; the tenants were introduced to the merits of convected heat and when economic conditions improved these tenants built new homes and heated them with floor furnaces. They would consider nothing else. And what happened? In thousands of these new homes, the windows still sweat and doors warp or swell. Where walls and ceilings are insulated they don't sweat, but frost often forms on the under surface of the roof and when the sun hits that portion the frost melts and drips down on the insulation. Is it any wonder the customer says "If you heat with gas your house sweats"? Such a misapprehension is an opportunity for live, aggressive competition, and a stumbling block to the development of new markets for natural heating.

Reasons For Sweating

What's wrong? How did it happen? In retrospect it is quite simple to explain. The house of the twenties had a masonry chimney between the kitchen and the dining room to serve the range oven. Here was a warm inside flue within easy distance of the floor furnace installation for venting. The possible requirements for venting combustion products of the modern gas range with its well insulated oven and small intermittent gas consumption do not justify such an expensive item. Consequently, this chimney is not used in new construction. How and where then are the floor furnaces to be vented? It has been suggested that the problem must have been turned over to Rube Goldberg because no other mind in our age could have devised such zaney contraptions as we find serving as venting installations for floor furnaces. The blame for the

condition rests on the manufacturer, the dealer, and the utility alike. We have served in all three fields and know whereof we speak.

Pressures Are Slight

The purpose of the floor furnace venting installation is to exhaust the products of combustion to the outside atmosphere. This is so obvious that it seems silly to repeat it. But many installers appear to consider that any pipe connection to the outside is a vent. Many installations are made by plumbers who are accustomed to handling products under pressure—water, steam and gas—and seem to assume that the products of combustion can be handled the same way. Any pressures involved are slight and further reduced by the draft diverter. At any rate we find grotesque venting installations consisting of truly enormous lengths of four inch downspout, a multiplicity of 90 degree elbows often serving two or more floor furnaces with tee connections and no increase in capacity, and the whole connected to a cold outside flue. You would swear the installer used a spirit level to keep from having an incline in the pipe. What a waste of material! Better to have left it all out and let the flue products dump at the draft diverter because that is what they do anyway in such installations.

Excessive thermal losses, exterior wind pressures, frictional resistances and insufficient flue capacity all take their toll in far too many floor furnace venting installations. In some territories we feel safe in saying the majority of the installations are so affected. Housing project builders often buy directly from some manufacturers and the installations are made with no dealer responsibility or supervision of any kind. Inspection is often lax and there is no one to check the checker. Even with conscientious inspection most code requirements do not provide for an effective venting installation. Some manufacturers recommend that the vent pipe length shall not exceed 20 feet. Or 15 feet. Or 75 per cent of the height of the vertical flue. The main limitation on the length of pipe is a continuous rise of one-half inch per lineal foot from the draft diverter outlet to the flue opening. The depth of the floor joints then govern how far the furnace can be located from the flue.

The only national specifications of any consequence which have come to our attention are included in bulletin CS 99-42, U.S. Dept. of Commerce, National Bureau of Standards, entitled "Gas Floor Furnaces—Gravity Circulating Types—A Recorded Voluntary Standard of the Trade." From our observation, there is a dearth of volunteers. How many dealers ever heard of it?

Specifications covering venting installations which can be followed to the letter and still result in inadequate venting are very nearly worthless. We are constantly finding the word horizontal used with reference to floor furnace vent pipes. Horizontal means parallel to the horizon: On a level. We find too many installations made ineffective by adherence to this definition. "The lateral portion of the venting installation," better defines the vent pipe from the draft diverter opening to the opening in the vertical flue. This portion must have an incline. Let's forget horizontal when referring to the vent pipe.

Codes Often Compromise

In the formulating of code specifications, in most cases, the rules are compromises. There is no room for compromises in the specifications covering the venting of floor furnaces. This is true regarding venting of any full-vented type appliances but in the case of floor furnaces we must consider that in the majority of cases we will have a much longer lateral portion of the installation than we will have with other appliances. Utility men may say: "You must not make it difficult for our customers to use gas." Floor furnace manufacturers and dealers may complain that they are being forced out of a market that is rightfully theirs. It makes no difference. There is too much at stake for the use of half way measures. We must protect the customer's property in spite of the owner and, if, in so doing, we prevent the misapplication of floor furnaces we will be protecting that portion of our industry in spite of itself. The welfare of the public and the industry supersedes any selfish interest of any portion of the industry. We must prevent further destruction of property resulting from vapor spillage at the draft diverters of floor furnaces.

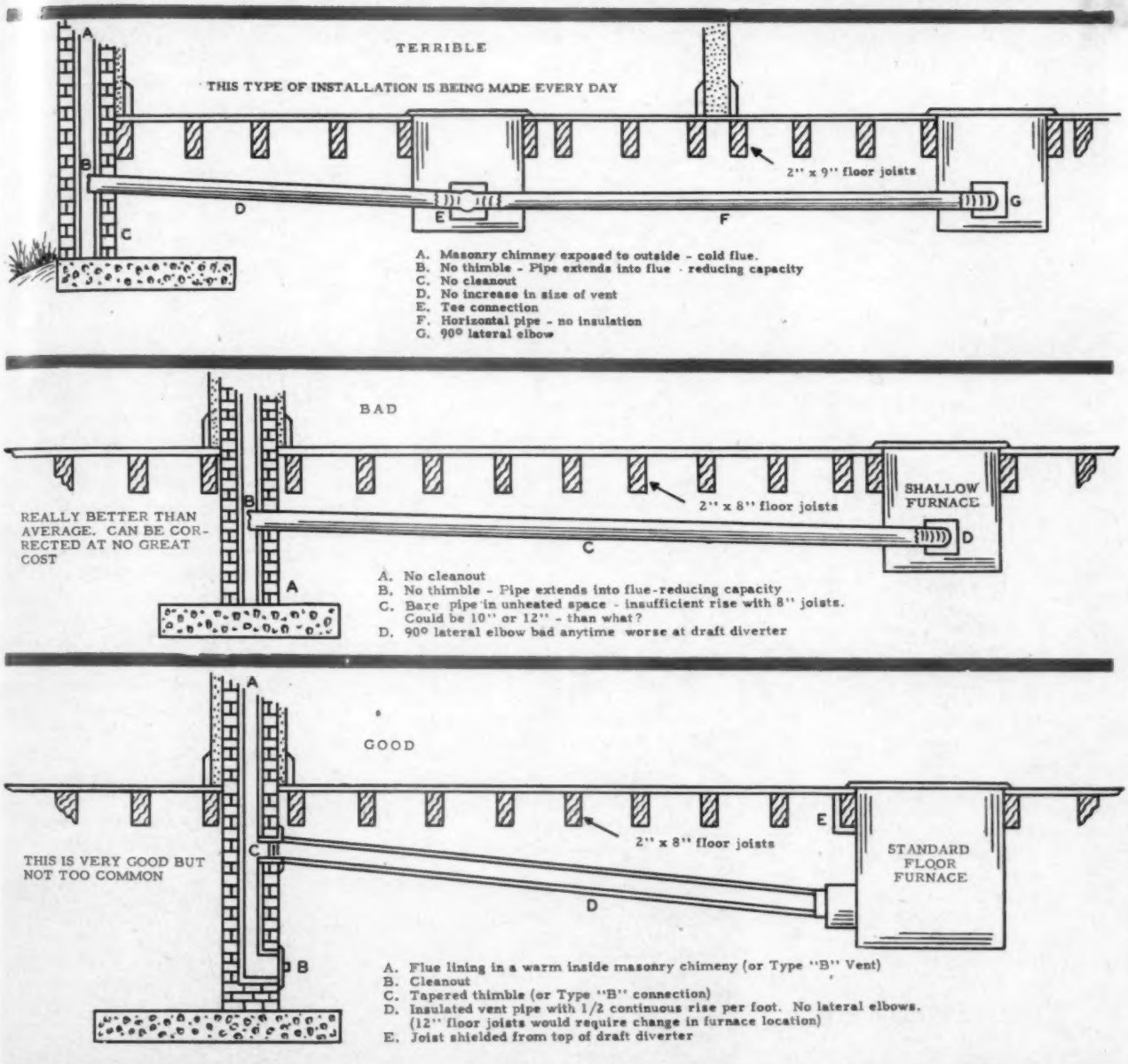
One reason, and it may be the main one, for careless floor furnace venting in basement-less houses is the feeling that since there is no connection between the air in the home and the air under the floor, fully effective venting is not required. It is a rare event to find a floor furnace dealer or installer with any knowledge of vapor pressure, and far too few floor furnace manufacturers grasp the significance of vapor pressure in the application of their products. But there is no excuse for the gas utilities.

Are we to assume that the many thousands of dollars spent by Bryant Heater Co. and the work of their men like C. F. Cushing, H. W. Heisterkamp, the late Major Stark and J. C. Patterson in bringing to us the application of silica-gel to air conditioning was wasted? Theirs may have been the voice "crying in the wilderness" at the time, but their graphic presentation of the action of water vapor has since been substantiated by every research project bearing on the subject. Where are the scores of utility engineers who participated in these schools? Do they think that vapor pressure is just a summer time activity? National Paint, Varnish, and Lacquer Institute found differently in 1938 and findings of research on the subject at University of Minnesota and Penn State and many others prove that it works round the clock throughout the year.

The difference of dew-points and vapor pressure within and without a summer air conditioned space is enough to force passage of this water vapor through most construction not incorporating vapor shields. What obstruction is offered to vapor passage by ordinary floor construction in a residence when any considerable portion of the water vapor products of combustion are being dumped at the draft diverter under the house? This vapor from a 50,000 Btu unit can condense over two quarts of water an hour.

The Vapor Does Condense

This vapor is harmless as long as it is vapor and if there was sufficient infiltration and exfiltration its presence would not be detected. But the house is insulated, caulked and weather stripped, and there already is considerable vapor present from normal housekeeping activities. Unless there is double glazing and storm doors, there is condensation on these surfaces. The vapor goes through lath and plaster and most forms of insulation like a hot knife through butter. Fine. No harm done. But it will find a surface with temperature below the


TERRIBLE
THIS TYPE OF INSTALLATION IS BEING MADE EVERY DAY
2" x 9" floor joists
A. Masonry chimney exposed to outside - cold flue.
B. No thimble - Pipe extends into flue - reducing capacity
C. No cleanout
D. No increase in size of vent
E. Tee connection
F. Horizontal pipe - no insulation
G. 90° lateral elbow
BAD
REALLY BETTER THAN AVERAGE. CAN BE CORRECTED AT NO GREAT COST
2" x 8" floor joists
SHALLOW FURNACE
A. No cleanout
B. No thimble - Pipe extends into flue-reducing capacity
C. Bare pipe in unheated space - insufficient rise with 8" joists. Could be 10" or 12" - than what?
D. 90° lateral elbow bad anytime worse at draft diverter
GOOD
THIS IS VERY GOOD BUT NOT TOO COMMON
2" x 8" floor joists
STANDARD FLOOR FURNACE
A. Flue lining in a warm inside masonry chimeny (or Type "B" Vent)
B. Cleanout
C. Tapered thimble (or Type "B" connection)
D. Insulated vent pipe with 1/2 continuous rise per foot. No lateral elbows. (12" floor joists would require change in furnace location)
E. Joist shielded from top of draft diverter

Above are sketches of installations, with the author's comments on each.

dew-point before it reaches the outside atmosphere. If this is the undersurface of the siding or within the insulation, there it will condense to form water or, in severe weather, frost.

The same thing happens to the undersurface of the attic roof. When the siding becomes saturated, the outside paint blisters and peels. Water drips into the ceiling insulation with annoying results.

Purdue Has the Answers

All this must and can be stopped by applying the findings of the Purdue research to our floor furnace venting installations in the manner set out in our article last month with special attention to the lateral portion of the venting installation. The use of two forty-five degree lateral elbows or one of sixty degrees may be permitted if they are not used to connect the lateral pipe to the draft diverter. Ninety degree lateral elbows are taboo. Keep in mind that the draft diverter is a horizontal type and the baffle is vertical with an unobstructed opening beneath. Remember thermostat control. Will the vapor hit the baffle, drop down, climb back up and fight its way around an elbow and through a lateral run when it can keep on spilling so much easier? Don't kid yourself. A considerable portion just won't do it.

While negative interior pressures within the home have no effect on the operation of a floor furnace in the house without a basement, a continuous supply of air sufficient for combustion and venting must be supplied for safe, efficient operation of the appliance. This is usually provided for by foundation vents left open on a single side of the home. The owner must be informed regarding the importance of these openings being kept unobstructed by leaves or snowdrifts, and if screened the screens must be kept clean.

Recently many manufacturers of floor furnaces have taken steps to eliminate the necessity for the use of messy pits or pans in installations where the floor of the house is close

(Continued on page 46)

Miss Louise Winslow is on the set of Through the Kitchen Window, Cleveland's new TV show sponsored by East Ohio Gas Company.

TV Looks Through the Kitchen Window

EAST Ohio Gas Company, Cleveland, in conjunction with Perfection Stove Company and Youngstown Kitchens is currently sponsoring a new television show, over station WNBK, "Through the Kitchen Window." The half hour show which will be telecast every Tuesday and Thursday at 2 p.m., had its premier on August 9.

"Kitchen Window" originates in a specially constructed 20 by 50 foot studio on the lower level of the gas company's building. A gallery at one end of the studio, separated from the stage proper by double-glass windows, accommodates a small audience.

The complete working kitchen is equipped with the most modern devices and was arranged to give the cameras the maximum of shooting angles. The kitchen can be easily and quickly rearranged by using a unique covered trough in the floor which can be tapped at any point to provide outlets for all utilities—gas, electricity, hot and cold water, and drains.

Instead of the micro-wave relay customarily used to transmit a program from a distant point to the broadcasting station, WNBK installed a coaxial cable direct from the NBC building to the East Ohio Gas building a block away.

In the opening show Miss Louise Winslow, veteran radio home economist, demonstrated how to make an angel food cake, and for the present she will confine her shows to kitchen preparation of foods. The studio has been constructed to permit the ready installation of other sets, however, and the scope of the program may eventually include demonstrations in other home economic arts.

Miss Winslow plans to have each edition of "Kitchen Window" a clear, easily-followed demonstration of the preparation and making of some family dish—or an entire meal. She will feature the standard dishes, rather than the exotic. At the end of each program, viewers are offered a bulletin containing recipes shown that day.

Each program is carefully planned, rehearsed and timed, although Miss Winslow ad libs her lines and instructions. This planned informality gives a homeliness and sincerity to the program that it is believed would be lacking from a straight script show.

Ketchum, MacLeod and Grove, Pittsburgh advertising agency, worked with East Ohio Gas Company in developing the original plan and working out the format of the show.

Historic Gettysburg Has Modern New Streamlined Gas Office

New business office of the Manufacturers Light and Heat Co., at Gettysburg, Pa., leaves little to be desired when it comes to modern trimmings. Summer-winter air conditioning by gas gives year-round comfort, and a New Freedom gas kitchen, in the home service auditorium, allows the company to expand its useful work with various groups in this historic community. The Gettysburg Gas Corp. was brought into The Columbia Gas System in 1930, and was absorbed by Manufacturers Light and Heat Co. earlier this year.

Manufactured Gas Instrumentation Shows Needed Improvements

by Hugh E. Ferguson

The Peoples Gas Light & Coke Co., Chicago, Ill.

THE instrumentation of the manufactured gas industry presents a rather confusing picture. In contrast to the fact that much of the basic instrumentation of gas plants is still first phase or merely indicating in nature, some very ingenious automatic analyzers and controls also are widely used. But even though some gas companies are making very profitable use of rather complex automatic controlling and analyzing equipment, it is not possible to state that the gas industry *as a whole* has progressed very far along the path from simple indicators toward automatic controls.

Because of its association with the petroleum industry, the natural gas section of the industry is better equipped in these lines than is the manufactured gas section. But due consideration should be given to the peculiarities of gas manufacture. Practically all gas-making processes are cyclic in nature, so that conditions vary over wide ranges, and there are abrupt changes in temperatures, pressures, and flows. The high temperatures which are inherent in all gas production processes are not insurmountable obstacles to satisfactory process regulation — but they don't make it easy.

Some companies have progressed quite far in specific fields of instrumentation and control, and not so far in others; while other companies have progressed in still different fields.

There are many obstacles to a completely satisfactory presentation of material of the nature included in this atlas. To avoid redundancy, all the variations of a particular device that are used to meet different conditions cannot be offered. Among the most useful or significant of recently developed or improved instruments for gas plant control, the following at least are noteworthy:

Condensed from a paper presented before the Production and Chemical Conference of the American Gas Association, May 1949.

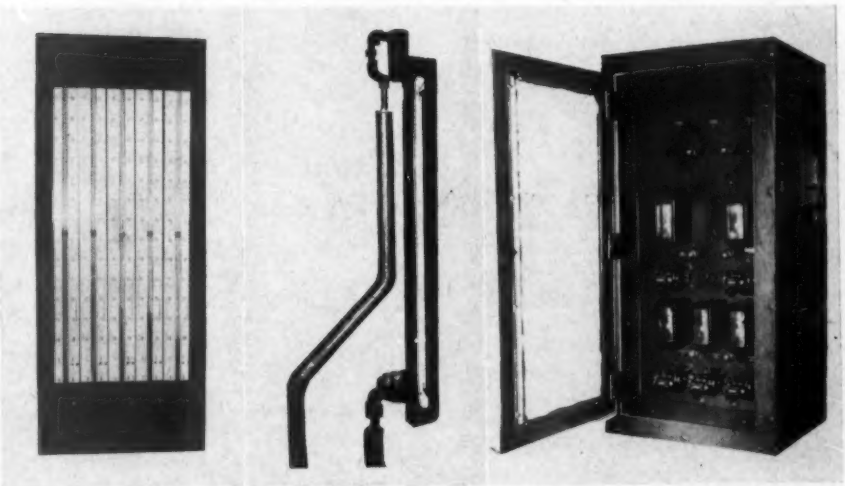


Fig. 1 Fig. 2 Fig. 3

Multiple Indicator for Machine Pressures

Figure 1—This assembly of four or five single-tube manometers into a single unit has several advantages over the use of several separate pressure gauges on the panel board of a carburetted water gas machine. It is practically error-proof—line stoppages or leaks in lines to any one unit being made apparent by the adjoining units. Only a glance at it provides a much more graphic and more emphatic picture of pressure conditions and flows in the machine than can be obtained by the comparison of successive readings of several dial gauges. The manometric liquid is bright red—and has a density of 3.0, so that pressures up to 90 in. wc can be measured in an overall height of 34 in. We have equipped eight or nine of our machines with these assemblies, and plan to install more as it becomes desirable to replace our old pressure gauges.

Paquette Steam-Rate Indicator

Figure 2—In carburetted water gas plants, production steam measurement is often complicated by the fact that the steam main is just under the operating floor and the steam meter-body must be located in the basement. This requires an electrical or pneumatic extension from the meter-body to the indicator on the panel board, which multiplies the maintenance troubles. As a substitute, in several of our stations we are using this steam-rate manometer, devised by Richard B. Paquette of the AGA Chemical Committee. It consists of a single-tube water manometer located above an orifice plate in the steam main, with well insulated 1-in. or 1½-in. differential pressure connections through the operating floor to the instrument. The upstream pressure connection is made to the side of the reservoir or well, so that excess steam condensate drains back into the main and the zero differential level is automatically maintained. The downstream pressure connection is made to a dash-pot at the top of the manometer tube. The orifice plate is sized to provide 45-48 in. wc differential at steam purge rate, the manometer range being 52 in. wc. The scale may be in inches, with a table of equivalent rates of steam-flow —or may be graduated to read directly in pounds of steam per minute. Blowing over by the surge when the

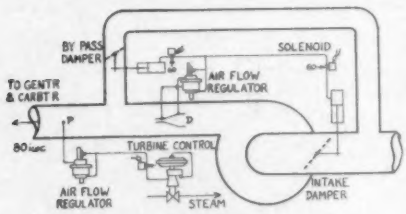


Fig. 4

steam valve is opened is avoided by a drop-leg between the manometer well and indicating tube. We used three in one plant, and nine in another plant, during natural gas reforming and carburetted water gas production operations last winter. (The Meriam Instrument Company.)

Ryan Telecounter

Figure 3—Judging from the publicity it receives telemetering of bulk transfers of gas is not widely practiced by manufactured gas utilities, although it is widely used in the natural gas industry. In Chicago, we have a number of customers receiving gas on an interruptable supply basis. In order to know the rates at which these customers at points from one to five or six miles from our plants are consuming gas, we have equipped the Connersville meters used in the sales with long-distance counters. The transmitter is a housed Mercoid switch that is tilted every 100 revolutions of the meter (or every Mcf of flow) by a crank-rod extending from one of the gears in the pvtt recorder train of the meter. The impulse of the mercoid switch is transmitted over lines leased from the telephone company to one of our major stations.

In two different stations there are a number of receiving counters mounted on large enclosed panels—each counter in circuit with and corresponding to a counter on one of the large Connersville meters in the plant of an industrial customer. The periodic interruptions of the counter circuits by the mercoid switches actuate relays which operate the receiving counters on the station panels in unison with the meter counters. This device is also used by a neighboring utility to permit their load dispatcher to know at all times the volumes of gas being delivered by us through isolated Connersville meters at the city limits.

Hagan Blasting Control

Figure 4—The hourly capacity of a water gas machine depends on the rate of production of heat in the generator fire-bed, which in turn depends on the rate of blasting or air flow. But when blasting rates of coke-fired generators are increased beyond 300 cu. ft./min/sq. ft. of grate area, there will be a tendency for surges in the air flow, caused by operation of the carburetor-air valve, to blow coke out of the generator. To avoid such surges, and to provide air to the generator at a constant rate regardless of the carburetor air flow, a machine in one of the Long Island plants is equipped with the control illustrated in the diagram.

When both the generator and carburetor blast valves are closed, the pressure build up at P throttles the steam to the turbine and reduces the blower speed. When the generator valve is opened, the drop in pressure

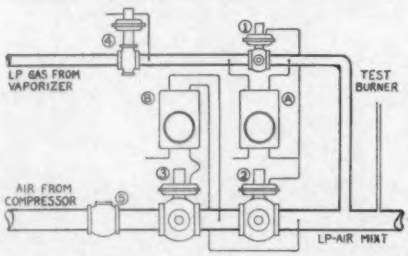


Fig. 5

at P speeds up the blower. As the flow differential across the flow nozzle D increases, the air flow regulator R opens the air-inlet damper, and closes the by-pass damper. When the carburetor blast valve is opened, the drop in pressure P increases the blower rate again—and the further increase in differential at D closes the by-pass tight, and opens the inlet wide. When the carburetor valve closes, the increase in pressure at P reduces the blower speed, and the drop in differential at D opens the by-pass and closes the intake part-way. Then when the generator blast valve closes, the absence of a differential at D permits the by-pass to open wider and closes the intake, while the build up in pressure at P throttles the turbine to idling speed.

It would seem that this blower control system would be useful in plants using a single blower for several machines — the carburetor by-pass and controlled air-intake tending to even out the blower operation.

Brown Gas Mixer

Figure 5—Most gas mixing control devices operate on principles similar to that of a flowmeter—the major difference being that they utilize fixed differentials and variable orifices rather than fixed orifices and variable differentials. The orifice openings are automatically varied to maintain fixed differentials across them, and are sized to provide the desired ratio of

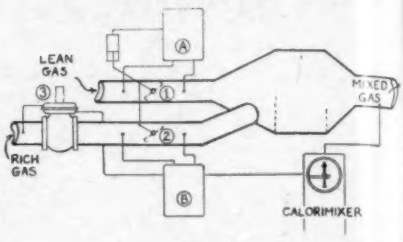


Fig. 6

gases in the mixture. These variable orifices may be plug or cylinder valves. diaphragm-governed port valves, or butterfly valves.

The Brown mixer, used for mixing air and propane or butane, uses North American adjustable port plug valves. The pressure of the gas from the vaporizer is maintained constant by the pilot loaded regulator 4. When there is a change in rate of consumption downstream there will tend to be a change in the differential across valve 1. But the combination recorder and air-operated controller A varies the opening of valve 1 to maintain the differential across it constant, and also simultaneously varies the degree of opening of valve 2 so as to maintain the fixed ratio between air flow and gas flow. Changes in the degree of openings of valve 2 tend to cause changes in the differential across it, and the recorder-controller B varies the opening of valve 3 to bring the differential across valve 2 back to the pre-set "normal." Thus there are fixed (but not necessarily identical) differentials across valves 1 and 2, the degrees of openings of these valves being simultaneously varied to meet downstream demands. The differentials across valves 1 and 2 are selected and manually adjusted to produce the desired proportioning in the mixtures, on the basis of burner or calorimeter tests—so that propane or butane or mixtures may be used. Note that this is an example of third-phase, or manually set, automatic control equipment.

Smoot Gas Mixer

Figure 6 — The principle of the Smoot and the Askania Mixers is similar to that of the above, except that instead of pneumatically operated plug valves, hydraulically positioned butterfly valves are used. As the flow of base gas (at constant pressure) across the No. 1 butterfly valve is increased (usually by increasing the compressor rate), the differential across it tends to increase. But the controller A repositions the No. 1 butterfly to regain the normal differential (4 in. wc). A second butterfly valve No. 2, in the enriching gas main,

is mechanically linked with the No. 1 butterfly in such a way that changes in the setting of the latter cause comparable changes in the setting of the former, so as to permit the *ratio* of flows in the two mains to remain substantially the same. Changes in the position of the No. 2 butterfly tend to change the differential across it—and a second controller B varies the port opening of a regulator No. 3 to maintain a constant differential across the No. 2 butterfly.

Since there may be variations in the thermal contents of either or both of the two gases, a Cutler-Hammer calorimetric control, or Calorimixer, samples the mixture downstream and determines its thermal content. As the thermal contact of the mixture deviates from the desired normal, the action of the second controller B in adjusting the No. 3 regulator is slightly modified by the Calorimixer, so as to change the ratio of flows in the two mains just enough to get the desired thermal content in the output mixture.

In the Askania mixer, the controllers A and B utilize the typical Askania directed-jet mechanism to position valves in the hydraulic system which is used to operate the pistons that position the butterflies and the regulator. In the Smoot mixer, the butterfly differentials actuate diaphragm regulators which position a way-beam that in turn controls the bleed-rate from the hydraulic system as a means of positioning the butterflies and enriching gas regulator. Note that the addition of an "analytical mechanism" in the form of a calorimeter makes this a fourth-phase instrument or control—one of the very few of that class used in the manufactured gas industry.

It would seem that the industry would be greatly benefitted if the association provided better opportunities for the development and exchange of ideas and the dissemination of facts as to what can be done, and what has been done, to improve instrumentation and process control in manufactured gas plants. An occasional paper of limited scope is not sufficient to maintain interest or to provide enough information.

Pressures Read without Shutting Off Low Pressure Gas Service

STANLEY J. SAWICKI, a maintenance man in the distribution operation department of Consolidated Edison Company of N. Y., came up with an idea recently that netted him a $100.00 award from the company's suggestion award committee.

He devised a way to take pressure readings on low pressure gas services without first shutting off the service as had always been necessary.

Formerly the service valve had to be shut off before pressure readings could be taken, and customers' service was interrupted. Gas appliances in the buildings had to be turned off before the service was cut off, and then turned on again and checked after service had been restored upon completion of the job.

What was needed, Mr. Sawicki reasoned, was a procedure or device whereby gas pressures could be checked without having to turn the service off or cause a drop in gas pressure in the building. Under ordinary circumstances removal of the plug at the head of the pipe connecting the consumer's service to the street main without first closing the control valve would expose servicemen to a concentrated toxic atmosphere.

The device that he developed eliminates the necessity of shutting off service valves, eliminates the hazard of an excessive pressure drop and reduces the time required for such jobs.

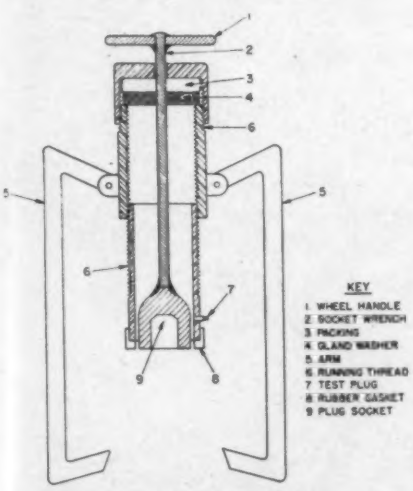
As shown in the accompanying diagram and photograph, operation and design of the device are simple:

The first step is to loosen the pipe plug at the head of the service tee with a wrench. After the plug has been loosened, the device is clamped and sealed to the tee over the pipe plug. The tee is gripped by placing the two arms (5) around the inlet head of the run of the tee. The rubber gasket (8) at the base of the device fits flush against the face of the reducer.

To fix the device firmly in place the lower barrel, which has a running thread, is turned clockwise until the arms are held in place. This operation tightens the joint between the washer at the base of the device and the reducer and thus completely attaches the device to the head of the service. It is then firmly in place and does not have to be held.

An adaptor to which the manometer will be attached is placed on the test plug (7) affixed to the device. The wheel-type handle (1) on the socket wrench (2) is turned gently and pressed forward at the same time until the plug socket (9) inside the device fits over the pipe plug. A few more turns of the handle and the plug is fully disconnected. Interior packing (3) and a gland washer (4) prevent

(Continued on page 47)



An outline drawing of the device.

This device makes it possible to take pressure readings on low pressure services without interrupting gas flow to customers.

Left—These are not men from Mars. They are workmen repairing a 30 inch main from the inside. One holds the light while the other cleans a joint with a pneumatic wire brush.

Right—The foreman of the "Midget Gang" applies the rubber-like compound to a joint in the 30 inch main.

AN INSIDE JOB

Philadelphia Gas Works Has Midget

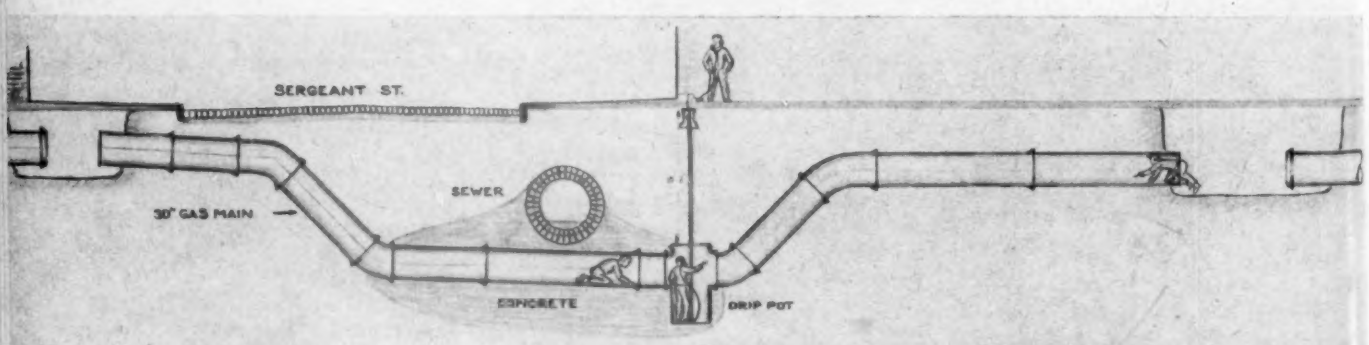
ENGINEERS of the Philadelphia Gas Works Company recently were faced with an unusual gas distribution problem, and they solved it in an unusual way.

The story goes back to the late 1890's, when a 30 inch cast iron main was laid at a street intersection under a brick sewer built many years before. Since the intersection is a low point in the vicinity, it was necessary to install a series of bends and a drip pot to carry the main under the sewer, which was placed too near the surface for the gas main to pass over it.

At the time of construction, there must have been some sewer difficulty necessitating the encasement of the 30 inch main in a concrete foundation to circumvent the sewer. It is now impossible to uncover the main from the surface without likelihood of damage to the sewer.

Slight leaks eventually developed at the joints encased in the concrete foundation, and recently an anticipated increase of pressure in this particular main made it necessary to stop all leakage.

It was decided to repair the main from the inside, using a caulking compound. The first step was to set up at one of the company's yards a duplicate of about one-half of the main to be repaired. Here workmen familiarized themselves with working within the



ELEVATION OF 30" H.P. GAS MAIN
ON W.S. OF AMBER ST. LOOKING WESTWARD

Right—"Hello, Jo." A telephone communication system was used on the job, enabling men working in the main to get fast response to their requests for needed tools and equipment.

sured men of their safety. By arrangement, only four men were assigned to work in the isolated section at one time. So that all on the job would know who was working inside the main, a tag system was devised whereby each man carried a tag with his name on it. Each one would put his tag on a "tag board" as he entered the main and remove it when he came out. While precautions had been taken for all known types of emergencies, none arose during the entire operation.

Mains

Below—Twin air compressors used to give the workers in the mains a continual flow of fresh air. In addition, a gasoline driven suction pump was attached at the opposite end of the main.

Below—The problem of lighting a pitch black underground passage was solved with this Kohler lighting unit, which is used normally by the company for large street jobs at night.

confines of a 30 inch main.

The group, calling themselves the "Midget Gang," had been selected for their short stature. On the job, dust masks and goggles made them look like strange creatures indeed.

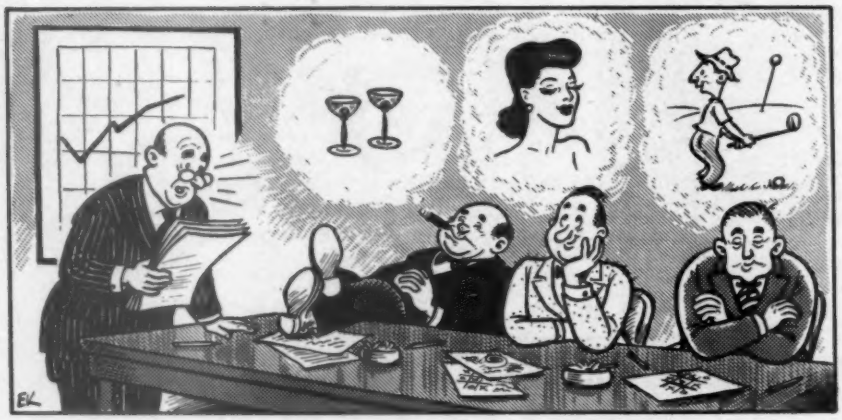
The main was cut-off on both sides of the section to be repaired, about 90 feet being taken out of service. It took several days to clean the joints with pneumatically driven wire brushes, and a total of seven working days were required to complete the job.

Lights and telephone equipment, along with all other precautions, as-

Right—Here are the members of the "Midget Gang" which repaired 90 feet of 30 inch main from the inside. The picture at the far right shows one of the workmen descending to the main under repair.

Conferences Should Bring Out Ideas of the Individuals Present

by Alfred M. Cooper



IN ANY sales conference the man at the head of the table should have in mind two primary objectives. The first of these is: Make the meeting absorbingly interesting to every salesman present. The second must be that of pooling the brain power of all the salesmen in the group in order that new ideas and methods of selling may be developed. Only through free but directed discussion can these two objectives be achieved satisfactorily in any sales conference.

There are definite procedures any sales executive may employ which will improve his ability to lead interesting, resultful discussion. Here are a few suggestions.

1. Never schedule a sales conference unless you actually intend to develop ideas from those present. If, instead, you wish to deliver an instructional lecture this is of course permissible, but a lecture is not a conference. Most unsuccessful conferences result from the leader's inability to repress his own desire for self-expression. Limit your introductory remarks to three minutes, then put a problem before the group and thereafter let the salesmen do most of the talking.

Your job as leader is to encourage others to talk. Your participation should never exceed 20 per cent of the total talking done.

2. You have attended sales conferences that could and should have been substituted for with a memorandum to subordinates. This situation arises most frequently in the case of conferences scheduled to occur at regular intervals, whether or not there happens to be anything worth discussing at that time.

To determine beforehand whether or not a particular sales conference should be convened, make brief notes on a card of the essential topics to be discussed in that meeting. If these objectives justify taking a dozen or so people away from their jobs for a couple of hours, call the meeting. Otherwise, call it off.

3. Your sales conferences will be interesting if you talk but little, if you forever keep the discussion on the subject, if you repress the too-talkative individual *who is a member of any group*, if you put a stop to all private conversations.

Group members wander from the subject under discussion through association of ideas, and this practice will not cause trouble if the leader knows his job. The others present will appreciate your telling the wanderer that he is off the subject. As soon as the group comes to realize that such digressions will not be permitted, there will be fewer of these at each succeeding meeting.

The verbose fellow will do all the talking if you let him. This is unfair to the more reserved salesmen in your group whose ideas may be much more worth hearing. First ask the group members not to let the longwinded person do their talking for them. When this fails to get results (and it usually does fail), bluntly ask the discussion-hog to give someone else a chance to talk. You will find that too-talkative folk usually are surprisingly thick-skinned and will not resent a little roughness on your part.

Private conversations can and should be eliminated for all time in the opening conference of any series. Usually a request to the whisperers to put their ideas before the entire group will suffice.

Interest in any sales conference increases in direct ratio as conflict of ideas develops. This is particularly true in the case of any group made

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Alfred M. Cooper, of Desert Center, Calif., is the author of the book, "How to Conduct Conferences," published by McGraw-Hill.

up of aggressive-minded people of salesman caliber. Therefore, emphasize differences of opinion as they occur and deliberately stir up the group. A redhot discussion produces more ideas in ten minutes than does a listless, sedate meeting in two boring, wasted hours.

A group is interested when interruptions are frequent and when the salesmen are impatient of outside distractions, such as phone calls or messengers. They are uninterested when they frequently check the time, fidget, or tap their feet on the floor. Since the leader of any discussion group is solely responsible for the development of interest in his conferences, watch for indications of lack of interest and be ready to apply the remedy, as indicated above.

4. Never call on any group member for a response. Even the most reserved salesman, or one with language difficulties, will participate satisfactorily once he becomes thoroughly interested in the discussion. If he is not ready to talk, you will only antagonize him by calling on him. Above all, refrain from calling on group members in rotation around the table. This kills the most desirable element of any meeting—spontaneity of response.

If you can recollect some instance in which you have been a group member in a conference and the leader called upon you for an opinion before you were ready to talk, you can readily appreciate the resentment this practice can engender.

5. As conference leader your job is to promote worth-while discussion. To accomplish this, confine your own participation to short, snappy questions designed to develop new ideas from the group. These follow-up questions are extremely important. They are essentially spontaneous in nature, although the leader's knowledge of the subject under discussion may help him to foresee situations in which a general type of follow-up question will fit.

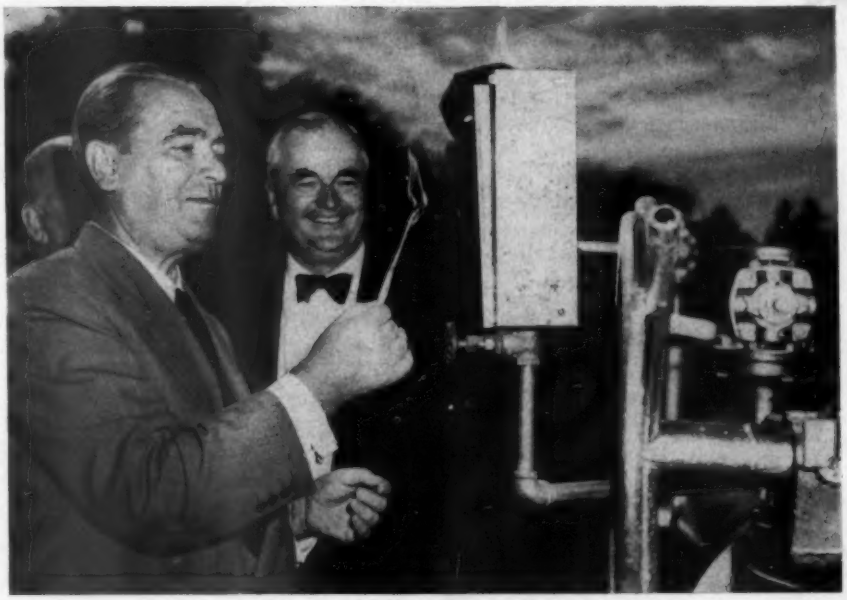
A follow-up question is properly worded and timed if it slips smoothly into the discussion and instantly produces a quick upsurge of interest and response. If silence falls and interest obviously slackens after you ask such a question, it was either improperly worded or—and this is the more common situation—poorly timed. A little practice and observation of their effect will improve your follow-up questions and thereby increase group interest.

In certain circumstances it is permissible to give follow-up questions a directional twist. This is accomplished by confining these questions to certain group responses which relate in sense to an idea the leader wishes to appear as emanating from the salesmen themselves. By consistently basing follow-up questions on predetermined objectives, almost any decision can be attained which appears reasonable to the group.

This sort of directional effort should be employed only infrequently in a sales conference. Ordinarily the leader will explore any suggestion made by a group member until its value or worthlessness has been determined. In this connection the leader should be slow to decide arbitrarily that a salesman's suggestion is of no value until it has been given some consideration. Otherwise, some excellent ideas may be carelessly brushed aside.

6. If the executive has occasion to lead discussions with a number of sales groups, he may, if necessary, indirectly introduce a suggestion of his own into a particular discussion. This is done by saying: "In another conference I attended, this idea was brought out." He then outlines the suggestion and asks the group to comment on it.

In unusual instances this technique (known as the "transfer") may be employed whether or not the idea in



Taper in hand, Mayor O'Dwyer lights the first natural gas flame to burn in New York City, as John Kohout, President of the New York and Richmond Gas Co., gives smiling approval.

Natural Gas Comes to New York City

MAYOR WILLIAM O'DWYER, of New York City, lighted the first natural gas flame in the greater New York Metropolitan area on the afternoon of August 22. Present at the ceremony were Cornelius A. Hall, President of the Borough of Richmond, George A. Arkwright, member of the New York Public Service Commission, and E. Holley Poe, director of Texas Eastern Transmission Corp.

John Kohout, President of the New York and Richmond Gas Co. presided.

In his remarks Mayor O'Dwyer spoke of the tension caused in New York City in recent years by the several strikes of coal miners and of tug boat men. He said that the advent of natural gas in the area would remove these serious threats to the continuity of utility services.

Mr. Kohout spoke of the long history of public service of the company, and said that the conversion to natural gas would bring lower rates to the community.

Mr. Poe congratulated the citizens of Richmond borough on being the first in the New York area to have the advantages of natural gas, adding that it was an event toward which he and the Texas Eastern Transmission Corp. had long looked forward. He pointed out that in using Texas gas, New Yorkers were contributing to the conservation of natural resources in the southwest.

Several hundred representatives of civic organizations, business and industrial leaders of the community were guests of the gas company at a preceremony luncheon, and at the actual lighting of the first flame at Mariners Harbor gas holder station.

question ever was suggested in any other group.

7. Every conference leader should know how to utilize the "pick-up." Thus, a suggestion is made by a salesman which is of little value at that stage of the discussion, but which the leader knows will fit in nicely later on. When the proper time comes, the leader will then ask the salesman to repeat his earlier statement, and thereby get the idea before the group at exactly the right moment.

8. About three times hourly stop discussion long enough to sum up, fairly and impartially, all ideas brought out by the group up to then. This summation obviates rehashing of old ideas and encourages the salesmen to bring out new ones. In making such a summation be very careful to avoid any indication of personal bias. Nothing kills interest so quickly as tipping off your own convictions after you have told a group that they have been called together to give *their* ideas on a subject.

If you are not interested in the salesmen's ideas and have no intention of implementing the group's decisions with executive action, you will do well to call off all future conferences and either deliver "pep talks" or issue your orders in the form of memoranda.

9. When any executive conducts a conference in which the group members happen to be his own subordinates, it sometimes occurs that the success of the conference may depend to a marked degree upon the on-the-job relationship of the executive and his employees. Thus, a boss who is too hard boiled with salesmen will have difficulty in getting his group members to loosen up in conference and respond freely. Contrariwise, an easygoing executive may have trouble in controlling discussion (repressing

(Continued on page 47)

Chuckwagon Boys from AGA Tell Stove Roundup Plans

Twelve and one-half million gas ranges more than 10 years old will be herded out of cookshacks and kitchens throughout the country this fall, in the annual Old Stove Roundup to be staged by gas utilities and appliance dealers in a nationwide million dollar campaign. Since its inception 20 years ago in Atlanta, Georgia, the Roundup has become highly popular sales promotion, and one of the most painless devices ever designed to reveal prospects for the sale of modern gas ranges.

Detailed plans and gimmicks to make this effort the most successful in the gas industry's history were discussed at the Statler Hotel in New York on August 8 during an all day conference sponsored by the American Gas Association and the Gas Appliance Manufacturers Association.

In a setting colorful with trappings of the old West, Chairman Hugh H. Cuthrell, vice-president of The Brooklyn Union Gas Co., welcomed an attendance of more than 160 gas utility men and range manufacturers. H. Vinton Potter and Clifford E. Hall, of AGA, outlined the present plan and explained the industry's promotional campaigns with a series of factual charts. Christy Payne, Jr., vice-president of The Peoples Natural Gas Co., Pittsburgh, emphasized the great importance of dealer cooperation, pointing out at the same time that appliance dealers should be reminded that they realize a greater profit margin from the sale of gas ranges than from the sale of electric ranges.

Charles W. Person, director of advertising AGA, announced that $454,000 has been set aside for national advertising for the three month campaign, $300,000 of the sum having been contributed by range manufacturers.

More than 60 gas range manufacturers have pledged their active support of the program, and James Gorton of GAMA stressed the importance of greater utility-manufacturer cooperation. He estimated that whole-hearted dealer cooperation in this campaign would mean $200,000,000 in the pockets of some 40,000 dealers. On the subject of dealer participation, James F. Howley, manager of dealer relations, the Brooklyn Union Gas Co., spoke with some authority, Brooklyn Union having had an enviable record of amicable dealer relations over a period of many years. Serving a community of 780,000 meters, the company does a $4,000,000 gas appliance business annually, and dealers average about half of it under the company's program. The utility plans nightly meetings with dealers in Brooklyn to create interest in the coming promotion.

Hugh H. Cuthrell, Brooklyn, is shown wielding two most authoritative "gavels" at the New York Roundup.

Below—Christy Payne, Jr., Pittsburgh, gets down to cases with some hard-to-dispute facts and figures.

Wild West Features Described

George Brown of Public Service Electric & Gas Co., New Jersey, gave the audience a quick demonstration of how to set up a very effective corral display at a minimum of expense.

Frank W. Williams, AGA., described some of the showmanship features of past and present Old Stove Round Ups such as rodeos, parades, contests and prizes for children, wild west shows, chuck wagons plus all the rest of the cowboy's gear. A booklet distributed at the close of the meeting expanded these and other promotional ideas designed to awaken public enthusiasm.

James Deely, manager of the new business department, The Brooklyn Union Gas Co., presided over the afternoon session.

10 TO 20 MORE FOR EACH 100 SALE
Gas Range 77 110 44
Electric Range 62 75 31
Refrigerator 77 93 31
Washer 92 33
Radio Comb 80 35
Freezer 100 33
Television 100 25
OLD STOVE ROUND UP

Negligence Defined in Utility Law Suits

by Leo T. Parker
Attorney at Law, Cincinnati, Ohio

RECENTLY a reader wrote, as follows: "In the majority of our suits the question of 'negligence' seems to be most important. In other words, 'no negligence, no liability.' Please give in plain language the details of when and under what circumstances officials of gas corporations may avoid being negligent and therefore win suits. A list of higher court decisions which illustrate different phases of the law on negligence will be appropriate at this time."

Actually the term negligence means want of ordinary care. Stating the definition in other terms, negligence is a *lesser* degree of care than would have been exercised under the identical circumstances by *experienced* and *prudent* officials and employes of other gas corporations.

When Laying Pipe Line Is Negligence

Considerable discussion has arisen from time to time over the legal question: Under what circumstances is laying a pipe line negligence which results in *absolute* liability of a gas corporation for subsequent injuries to persons and property?

For example, in Raphael Brothers v. Cerophyl, 30 So. (2d) 116, it was shown that a gas company laid a temporary pipe line with second-hand piping in a shallow ditch paralleling a highway and passed it through a culvert. It was a detour road. In the early morning a truck driver, when negotiating a turn in the detour, struck the pipe line causing it to break and the gas immediately ignited. The trailer and cargo were totally destroyed.

In subsequent litigation the higher court held the gas company liable for full value of the truck and its cargo. The court said:

"Considering the location of this high pressure gas pipe line, its proximity to the highway, the manner of laying it through the shallow culvert, the failure to protect said pipe from the traffic or to warn of its presence defendant's (gas company) negligence has been abundantly proved."

Also, see Mullins, 282 Ky. 111. Here a company laid a pipe line across the surface of a driveway leading into a private home. While backing a car into his yard the home owner broke the line and was injured when he inhaled the escaping gas that enveloped him. In holding the company liable the court said:

"In laying pipe lines the company is chargeable with notice of the tendency of the soil to sink or subside leaving the pipes without proper support. . . . Yet it placed this insecure pipe line, containing a dangerous substance, across his right of way without support. We think the plaintiff (home owner) made out a case of unquestionable negligence."

And again see McWilliams case, 179 S. W. 28. The facts are that a company under a contract laid an 8-inch gas pipe line under the dirt side of a 40-foot road, 14 feet of such road being covered with macadam. The pipe was either laid near the surface of the dirt road or else the dirt covering the pipe had worked or washed away, the result being that when a steam roller with 4-inch spikes was driven over the road in the process of repairing the macadam portion, the spikes in the wheels punched holes in the iron gas pipe and the operator was injured when the escaping gas ignited and exploded.

In holding the company liable in damages to the operator of the steam roller, the higher court said:

"It cannot be said as a matter of law that appellees (company), in the exercise of the care required, could not have foreseen and anticipated that this accident might have happened."

In Thompson, 103 Kans. 104, a company laid a pipe line at the extreme edge of a highway near the fence and about 25 feet from the center of the road, a ditch being between the pipe line and the roadway. The wheel of a tractor punched a hole in the pipe and the gas passing through it ignited. In returning a verdict in favor of the tractor owner the court pointed out:

"It is true that a pipe line may lawfully be laid along a public highway. However, it must be so laid that it will not obstruct or endanger the use of the highway for public travel. . . ."

In Murphy v. Ludowici Gas & Oil Co., 150 P. 582, the higher court said that a company conveying natural gas in a pipe line laid on the ground must exercise the *highest* degree of care to avoid injury to innocent persons.

Circumstantial Evidence

According to a recent higher court negligence of a gas company may be proved by circumstantial evidence. Of course, the circumstances relied on must be of such a nature and so related that the *only reasonable conclusion* to be drawn therefrom is that the company's employes were negligent.

For example, in Lee v. Gas Service Co., 201 Pac. (2d) 1023, the testimony showed facts, as follows: A property owner was killed by explosion of natural gas which had leaked from a gas distribution system into the basement of building in which explosion occurred. The testimony showed a leak in a gas main in front of the building about a hundred feet away. The higher court held that the gas company's employes were negligent in failing to discover and repair the leak. The court said:

"The duty to keep its lines in good condition and to have a proper system to discover leaks was not erroneous."

For comparison, see Skel Company v. Holloway, 171 Fed. (2d) 670. This court held that on receipt by a gas company of notice from a customer of defects in the *customer's* service installations, the company may discharge its duty by shutting off supply of the gas until the customer corrects the defects. On the other hand, if the company *undertakes* to inspect the

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service installation and to discover and correct the defects, the company's employes must exercise a degree of care *commensurate* with the known dangerous character of gas to discover and repair the defects. In other words, the company is liable for resultant injuries to persons or private property if its employes fail to discover and repair the defects which they attempt to locate and repair.

In this case the testimony showed that the company's employe inspected the home owner's distribution system, found one leak, attempted to repair it, and informed the home owner that the leak had been discovered and repaired and that the system was safe to use. Soon afterward an explosion occurred. In holding the gas company liable, the higher court said:

"The conclusion seems inescapable that, in the light of all the evidence concerning the conflagration admittedly experienced, the defendant (gas company) was responsible for it by reason of the negligence of its employes."

The court held that the employes could have avoided liability by turning off the gas and *notifying* the consumer to have defects in his appliances repaired.

And, see Rice v. King, 218 S. W. (2d) 91. This court held that violation by a gas company of state laws indicates negligence which may result in the company being liable. The court said:

"Some of the provisions of these state laws apply to the owner of the building where the gas is in use, others to the occupying tenant and still others to both the landlord, or owner of the building and the tenant. A violation of these statutes or any of them is evidence of negligence."

Jury May Decide

According to a recent higher court a jury may weigh the presented testimony and decide whether or not an explosion of gas was caused by negligence of the gas company's employes.

For example, in Consumers Power Co. v. Nash, 164 Fed. (2d) 657, it was shown that a dwelling and its contents were completely destroyed by fire and all persons in it were severely burned, some fatally.

Suit was filed against the gas company for damages. The testimony presented to the jury showed the following: The gas company had restored gas service to the home using an old service line which had been underground for almost 17 years, and had been unused for 13 years. There was substantial evidence that the service line was in bad order; that the company's employes did not make a sufficient test of its condition; and had failed to correct impairment after it should have known that gas was escaping. The jury decided that the gas company's employes were negligent and held the company liable in damages. The higher court approved the verdict, saying:

"It was sufficient to take the case to the jury upon the issue of appellant's (company) negligence. . . . The damages awarded to some of the plaintiffs were undoubtedly large, but the injuries were grave. . . . Reasonable apprehension of danger constitutes both the criterion of liability and of the causal relation between negligence and injury."

Imputed Negligence

Negligence of a gas company's employe is *imputed* to the company although the resultant injury is sustained by a stranger who endeavored to protect the employe whose negligence directly caused the subsequent circumstances.

See Longacre v. Reddick, 215 S. W. (2d) 404. Here a truck loaded with gas collided with another truck. When the collision occurred, the gas became ignited. A pedestrian named Ward was walking along the highway a short distance from the point of collision. Seeing the driver of the truck apparently unconscious in the cab, Ward rushed to the truck to rescue him, pulled him out of the truck and started away from the truck with him. When he was only a few feet away, the gas in the truck exploded, causing Ward to be severely burned.

The higher court held that Ward could recover damages from the gas company. This court said:

"Liability is imposed on (gas company) because it was the master of a servant (driver) whose negligent conduct caused an injury to the plaintiff (Ward)."

Hence in this case Ward, the pedestrian who rescued the truck driver, was awarded damages because the testimony showed that the truck driver's own negligence caused him to be in the dangerous situation from which he was rescued by Ward. This peculiar decision is based on the supposition that had the truck driver not been negligent Ward would not have been injured.

Independent Contractor

Recently a higher court rendered an interesting decision to the effect that a gas company is *not* liable for negligence of employes employed, paid and controlled by a contractor.

For illustration, in Mercer v. Ohio Fuel Gas Co., 80 N. E. (2d) 635, it was shown that a gas company employed R. H. Smith to take up an old and re-lay a new pipe line through certain private lands. The contract provided for "coating new pipe with enamel, joining and laying of new pipe," etc. The gas company delivered the enamel on the job in metal drums. Then the gas company surrendered to Smith *all control* over the enamel and entrusted to him *all* of the details of the work.

This enamel had to be heated before it could be applied to the pipe. In order to do this Smith's men chopped the enamel from the drums and put the pieces into a large kettle. These men left some of the pieces of enamel on the ground. Many valuable hogs on the private premises ate the enamel and died.

In subsequent litigation the higher court refused to hold the gas company liable for negligence of employes

(Continued on page 46)

what's wrong with this picture?

NOTHING . . . except that Friend Squaw won't have to carry her old range in to you dealers. *You* are going to pick it up for her and install a brand new *Universal Gas Range* right into her wigwam.

Seriously, Mr. Dealer, could you do better than to offer one of the many different Universals to Mrs. American Homemaker during the Fall Old Stove Round-Up? She may not be as willing to bring her old range to you as the lady in the picture, but she's going to want modern excellence. She's going to want a brand name like Universal, top burner efficiency like Universal, a precision oven that bakes and roasts like Universal, and radiant broiling, with her hands and face entirely out of the heat zone, like Universal.

She wants Titanium acid-resisting enamel all over, large surfaces without cracks and corners that collect dirt, and a broiler pan she can clean in 3 minutes.

She wants skyscraper construction and Universal perfection, so that her modern range will last like her old outmoded one. She wants Universal!

Berkshire Model, with high, separate broiler

Fall is Round-Up Time

Universal offers a complete separate Old Stove Round-Up Campaign package to coordinate with A.G.A.'s National Fall Round-Up. Send to Cribben & Sexton for information.

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GAS RANGE

with Exclusive 'Comfort-Touch'

A few Dealer Franchises are still available. Write to

CRIBBEN & SEXTON CO., 700 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILLINOIS

News of the Gas Industry

Ohio Fuel Gas Asks Increase in Wholesale Rates

Ohio Fuel Gas Company has applied to the Federal Power Commission for a change in tariff covering its rate for wholesale service which would amount to a rate increase of approximately $1,228,568 annually. This is one of the largest rate increases ever proposed to FPC by a gas utility.

Ohio Fuel said that the proposed increase, amounting to about 4.2 cents per thousand cu. ft., is necessary because unprecedented demands have required changes in sources of gas supply necessitating large purchases of natural gas from the southwest. This change in operations, the company stated, has required investment in production and transmission facilities of some $25,000,000, and the cost of gas purchased has increased approximately three cents per Mcf. The company also said that it has experienced substantial increases in labor and material costs.

The three largest purchasers are Cincinnati Gas and Electric Co., with an estimated increase of $283,199; Dayton Power and Light Co., $682,712, and West Ohio Gas Co., $122,916.

Ohio Fuel, which is a member of The Columbia Gas System, proposes to make the new rate effective September 6.

George W. Knourek Joins Pioneer Service

George W. Knourek, formerly vice-president and treasurer of Standard Gas and Electric Co., has joined the staff of Pioneer Service & Engineering Co., having been elected vice-president and director of the company.

He has devoted over 25 years to the accounting and financial phases of the public utility business and will be in charge of the department of finance and accounts.

Promotions Made at Koppers Seaboard Coke Plant

Paul C. McConnaughey, personnel manager of the Gas and Coke Division of Koppers Company, Inc., has been named assistant manager of the Seaboard plant at Kearny, N. J., according to an announcement by K. R. Hare, manager.

H. J. Meredith has been made chemical engineer, and L. W. Schmidt engineering technician on the manager's staff.

Mr. McConnaughey joined the sales department of the Seaboard plant in 1929. Mr. Meredith was first employed by Koppers in 1923 in the research department, and Mr. Schmidt joined Koppers in 1942.

FPC Says 'Yes' to Added Natural Gas Facilities for Michigan-Wisconsin & Consolidated

The Federal Power Commission has authorized Michigan-Wisconsin Pipe Line Co. and Michigan Consolidated Gas Co., both of Detroit, to construct additional natural gas facilities which will increase the capacity of Michigan-Wisconsin's Texas-to-Michigan pipe line project now under construction by 27,000,000 cu. ft. a day to a total of 155,000,000 cu. ft. The new facilities will carry natural gas to communities in Missouri, Iowa, Wisconsin and Michigan.

Michigan-Wisconsin facilities authorized by FPC include substitution of 24-inch pipe for the 26-inch pipe previously authorized between Hugoton Field in Texas and the "Wisconsin Junction" near Millbrook, Ill.; and installation of compressor units which would increase the compressor horsepower from 15,600 to 21,600.

Michigan Consolidated, which will receive from Michigan-Wisconsin natural gas requirements in excess of those supplied to it under contract by Panhandle Eastern Pipe Line Co., was authorized to construct additional facilities in storage fields, pipe lines for distribution of gas in its market area, etc.

The Commission's order directed Michigan-Wisconsin to supply natural gas to the National Utilities Co. of Michigan, Michigan Gas and Electric Co., and Iowa Electric Co. for resale in certain Iowa and Michigan communities now served with manufactured or mixed gas.

Paige Completes 25 Years with Brooklyn Union

Clifford E. Paige was honored at a testimonial luncheon on August 15, when his associates at The Brooklyn Union Gas Co. observed his twenty-fifth anniversary with the company.

Mr. Paige joined the company in 1924 as vice-president. He was also chief engineer from 1927 to 1939. In 1935 he was elected President, and in 1940 chairman of the board.

Texas A&M To Give Short Course on Instrumentation

The Agricultural and Mechanical College of Texas, at College Station, Texas, will offer their fourth short course on "Instrumentation for the Process Industries," on October 12, 13 and 14. The course will be conducted as a seminar with lectures and discussions on the subject of automatic control.

Cooperating with Texas A & M in the presentation of this course will be many industrial concerns manufacturing oil, *gas*, and chemical products. Manufacturers of instruments and automatic controls are taking part by arranging to show educational exhibits, and provide lecturers for many of the sessions.

LP Northeastern Meeting Is in New York, Sept. 15-16

In keeping with the transition from a seller's to a buyer's market, sales and marketing techniques will be placed under close scrutiny at the annual northeastern meeting of the Liquefied Petroleum Gas Association in New York, Sept. 15-16, according to John Van Norden, sales manager, American Meter Co., who is chairman of arrangements. Sessions will be held at the Hotel Statler.

Philip F. Davis, of Con-Ed, Dies Suddenly

Philip F. Davis, a system commercial manager of Consolidated Edison Co. of N. Y., died on August 15 at Roosevelt Hospital in New York. He had been stricken by a heart attack a few days earlier while vacationing in Newfoundland. He was 46 years old.

Sales Department Changes Made at Washington

New assignments of Washington Gas Light Co. key sales department members, effective August 1, 1949, were announced by Roger A. Gordon, director of sales.

Appointments include that of Herbert H. McMurray, formerly advertising manager, to the newly created position of residential promotional sales manager. In this capacity he will be responsible for all promotional activities in the residential field for the entire system. He will administer such functions as new construction sales promotion, home service, and cooperative plumber and dealer activities.

Mr. McMurray is succeeded by Advertising Manager Robert H. Lewis, formerly residential sales manager for the Maryland company, who now directs the advertising and display program for the system.

Assuming the responsibility for all residential merchandising activities for the system is Merchandise Sales Manager C. C. Dillingham, who was formerly residential sales manager of the Washington company.

Estate Promotes E. Simms to Chief Engineer

Appointment of Ellsworth Simms as chief engineer of Estate Hertrola Division, Noma Electric Corp., Hamilton, Ohio, has been announced by Cecil M. Dunn, general manager. In this capacity Mr. Simms will be responsible for supervising and coordinating the design and development of all Estate products.

Ellsworth Simms

Mr. Simms has been associated with Estate for 20 years, starting as an assembly worker. During the War years he served as general foreman of Estate's aircraft division, supervising the manufacture of aircraft parts.

After the War he was assigned to methods engineering. In 1947 he was appointed gas range product engineer, soon taking over electric range design also.

511 Mile Pipe Line Proposed for New England

The Northeastern Gas Transmission Co. filed an application on August 25 with the Federal Power Commission for authority to build and operate a 511-mile natural gas pipe line in New England. The proposed line would connect with lines of Tennessee Gas Transmission Co. and Trans-Continental Gas Pipe Line Corp.

Alexander Macomber, chairman of the new company, announced that Northeastern has made arrangements with the two pipe lines for a supply of natural gas. Northeastern's agreements call for Trans-Continental to provide up to 100 million cu. ft. of gas daily, and for Tennessee to provide the remaining requirements, which are estimated at 120 million a day initially. The agreements are for 20 years.

New Booklet Published on Company Libraries

"A Brief for Corporation Libraries—A guide for their operation and management" is the title of a new, planographed, 64 page booklet.

The manual was edited by Alma C. Mitchell, librarian of the Public Service Electric and Gas Co., Newark, N. J.

It is claimed that this manual will be of assistance in the organization and administration of a corporation library. Various methods described have been selected from practices in effect in existing libraries and found practicable. A bibliography serves as a guide to more extensive study.

It includes such pertinent topics as place of library in organization, cost, layout and equipment, acquisition of material, cataloging and classifying, circulation, vertical files, searches, abstracts, reading lists and disseminating information.

Copies can be ordered from the Special Libraries Ass'n., 31 East 10 st., New York 3. Price $1.75.

AGA Announces Preliminary Program and Plans for Annual Convention in Chicago

Speakers representing several phases of business and industry are expected to bring new ideas and practices to the annual convention of the American Gas Association in Chicago, October 17 to 20. The general theme of the convention will be the popular "Gas Has Got It" slogan, and since promotional activities of the industry now are concentrated on the "Old Stove Round Up," the convention, under the title of the '49 Round Up, will carry on the western flavor.

A total registration of 6,000 is expected. Meetings are to be held at the Palmer House, Morrison and Sherman Hotels. Members are urged to make their reservations at an early date. Applications should be sent to AGA Convention Room Reservation Bureau, Room 808, 105 West Madison St., Chicago. Members are requested to choose the hotel which is headquarters for the Section in which they are most interested.

The general sessions as well as the accounting sessions, the Home Service Breakfast and the Manufactured Gas and Natural Gas Department meetings will be held at the Palmer House. Technical Section meetings will be at the Morrison Hotel while the Industrial and Commercial and Residential Gas Sections are slated to meet at the Sherman Hotel. Headquarters of the Guild of Ancient Supplers will also be at the Sherman.

The program has been arranged by the General Convention Committee under the chairmanship of George F. Mitchell, President, The Peoples Gas Light and Coke Co., Chicago, and the supporting departmental and sectional committees. Broad-gauged problems of the gas industry's main divisions will occupy the opening day of the convention. Leading off on Monday morning will be a meeting of the Natural Gas Department under the chairmanship of D. A. Hulcy, President, Lone Star Gas Co., Dallas, and vice-president of the Association. Following Mr. Hulcy's opening remarks on the phenomenal progress of the natural gas industry, nationally-recognized speakers will deal with paramount problems of the industry. Under the title, "Our Place in the Spectrum," the first presentation will cover developments in mobile radio. Other major topics will include potential natural gas reserves revealed by offshore drilling and problems of regulation.

Changeover Problems on Agenda

The Manufactured Gas Department meets Monday afternoon. Under the chairmanship of H. H. Cuthrell, vice-president, The Brooklyn Union Gas Co., and vice-president, AGA, the gas production research program will be reviewed. Special attention is expected to be paid to natural gas mixing and changeover problems, which now confront many companies on the eastern seaboard and elsewhere. In addition, such subjects as long-term load forecasting, peak load developments, and the general fuel situation are being considered for presentation.

General sessions have been arranged for Tuesday, Wednesday and Thursday mornings. Economics, promotion, industry relations, markets, manpower, pensions, and personnel are among the topics on the agenda.

Leading off the first general session will be the traditional address of the President, Robert W. Hendee, who is also president of Colorado Interstate Gas Co. Keyed to the theme of "The '49 Round Up," he will delineate the united efforts of the industry under the Promotion, Advertising and Research Plan and give a cogent picture of today's conditions.

Under the title, "Operation Enterprise," Frank J. Nugent, president, Gas Appliance Manufacturers Association, will analyze the appliance manufacturers' future plans from the viewpoint of further integration with the national programs of the utilities.

The 1949 pension attitude, a magnet of attention for both labor and management, has a prominent place on the program. Henry S. Beers, vice-president, Aetna Life Insurance Co., Hartford, will orient the gas industry on a sound approach toward employee retirement, financing pension costs, and the philosophy of different methods of charging the costs. He will also discuss proposed changes in old-age benefits under the Social Security Act.

"Safety Is Your Business" according to Dr. Ned H. Dearborn, President, National Safety Council, who will indicate how the average person can enlist in the war on accidents.

Pay Loads to Be Stressed

A mandate for more sales will be presented by Mr. Cuthrell as chairman of the General Promotional Planning Committee. In his talk, "Scanning the Planning for Sales in '50," Mr. Cuthrell will discuss the promotion and advertising plans projected and supported by the PAR Program. Coordination and timing will be the watchwords of his message which will throw more light on the Old Stove Round Up and other national sales campaigns to be inaugurated next year.

One of the gas industry's most profitable and stable pay loads will receive attention when Frank H. Trembly, Jr., sales manager, The Philadelphia Gas Works Co., speaks on "The Commercial Cooking Load Belongs to the Gas Industry." Mr. Trembly will analyze the current competitive situation, report on the activities of Subcommittee on Comparative Tests of Commercial Cooking Equipment, and recommend a course of action for the industry. A focal point of his remarks will be equipment improvement through the cooperation of manufacturers.

Dr. Henry T. Heald, President, Illinois Institute of Technology, Chicago, will describe effective methods of training technical manpower with particular reference to the gas industry.

The general sessions program will be rounded with special events and the presentation of AGA awards.

The Home Service Breakfast will be at the Palmer House Wednesday morning un-

(Continued on page 36)

Norton Keys to Long Generator Life:

Crystolon key brick for door arch

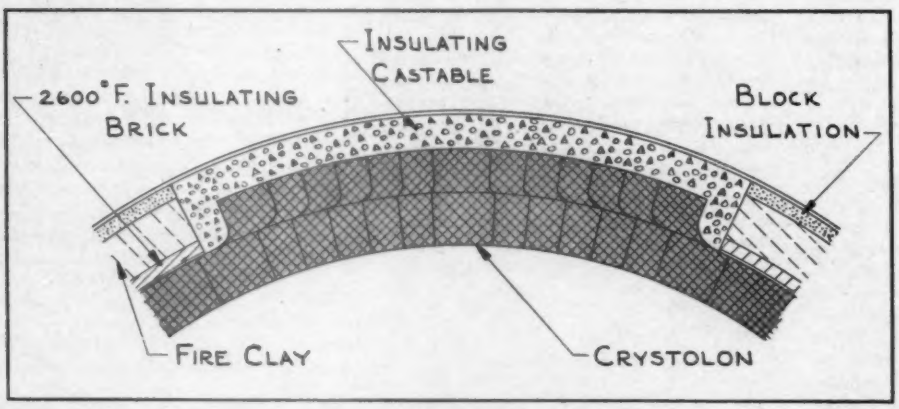
1. CRYSTOLON* Shapes

Crystolon shapes are made of the highest quality Norton silicon carbide plus a minimum of refractory bond. They are true to size and shape. Crystolon shapes possess high refractoriness and great strength at elevated temperatures and they have a remarkable resistance to abrasion, to spalling and to both the chemical and physical action of molten slag. Slag may adhere to the surface to a very limited degree but what does stick is very easily removed without harming the surface of the shape.

*Trade-mark Reg. U. S. Pat. Off.

2. Correct Design of Door Arch

Norton doors have a record of long life and trouble-free service due to an original design which has proved its serviceability in all Norton installations over a period of more than 16 years. The special Norton door arch shapes are radial in two directions to provide maximum wedging or keying. Furthermore, they are cut away (see illustration above) at the rear to reduce heat transfer to the shell. Due to the rugged design of Crystolon shapes, door arches properly installed usually last 6000 to 8000 hours.



Cross-section drawing of Crystolon door arch shapes and insulating materials

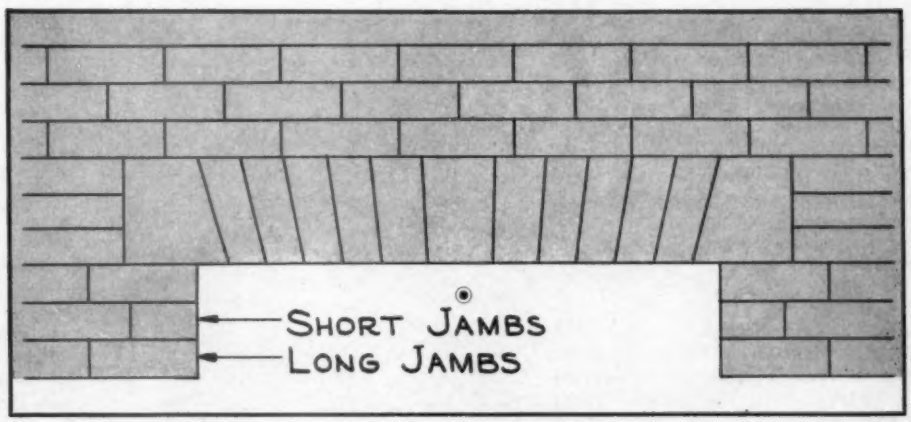
NORTON® Norton Company • Worcester 6, Mass.

3. Installation Know-How

Typical Norton generator lining

The experience of Norton refractories engineers in directing the installation of hundreds of gas generator linings around the country has developed a fund of important knowledge about the proper design and installation of Crystolon linings. For example, door arches should be set in place dry with the key brick raised about 1½". The skew brick must be level both vertically and horizontally to insure proper fitting of the arch shapes. The brick work between the doors should next be cemented in place, then the special arch shapes are removed, cemented and replaced, still leaving the key brick to be driven in place.

Drawing showing face of Norton Crystolon shapes with thirteen arch shapes in position



Free Booklet

Many helpful hints (like that on proper door treatment given above) may be found in a booklet just prepared by Norton refractories engineers and which we will be glad to send you at no obligation. Write for our booklet "Relining and Repairing Gas Generators" to Refractories Division, Norton Company, Worcester 6, Mass.

Can't be beat for handling heat!

NORTON®
REFRACTORIES

(Continued from page 33)

der the chairmanship of Eleanor Morrison, chairman, Home Service Committee. Delving into television, the breakfast program features a panel of three home service directors who will give their views of this medium of communication. Also at the breakfast, Esther Latzke, director, consumer service department, Armour Company, will tell why "Even Business Is a Woman's World."

The home service program continues Wednesday afternoon at the Hotel Sherman with a round-table discussion by four leaders in the utility and food fields. Topics include home service settings; sales floor round up; what's new in foods; and laundry demonstrations.

A comprehensive program of interest to all branches of the utility accounting profession has been prepared by the Accounting Section, L. E. Reynolds, controller, The Connecticut Light and Power Co., chairman. Parallel meetings divided into general and customer accounting on the one hand and materials and supplies accounting on the other, will open this phase of the convention Tuesday afternoon at the Palmer House. Continuing Wednesday afternoon, three sessions will be held as follows: general accounting, property records accounting, and customer activities. A panel discussion on service order simplification with a moderator and four participants will be included in the latter program. The final event will be an accounting luncheon Thursday at which the Section Chairman's annual report and a number of addresses will be presented.

The Industrial and Commercial Gas Section's part of the convention activities begins with a formal luncheon Wednesday at the Hotel Sherman. Principal speaker will be Mr. Hulcy, whose topic is "Industrial and Commercial Gas Sales—The Balance Wheel of the Natural Gas Industry." Opening the regular session immediately after the luncheon, B. T. Franck, vice-president, Milwaukee Gas Light Co., and chairman of the Section, will give the highlights of the committee activities during the past year. Thereafter three speakers will talk on subjects of interest to commercial and industrial men.

Domestic gas sales programs and techniques which are attracting national attention will be presented at the Residential Gas Section's meeting Tuesday afternoon at the Sherman Hotel. W. M. Jacobs, vice-president, Southern California Gas Co., Los Angeles, and chairman of this Section, will preside.

Operating men of the gas industry will have three sessions, Tuesday, Wednesday and Thursday afternoons at the Morrison Hotel, sponsored by the Technical Section under the chairmanship of W. R. Fraser, Michigan Consolidated Gas Co., Detroit. In addition to papers on problems of gas technology and distribution. Ernest R. Acker, President Central Hudson Gas and Electric Corp., will discuss the PAR Plan from the executives' viewpoint.

The technical sessions include such topics as the economics of elevating gas heating value, appliance simplification, corrosion control, and peak load storage methods. One panel group will present four different approaches to the use of existing plant equipment for high Btu oil gas production.

Proved Reserves Increase in Rocky Mountain Area

Although nearly 75 per cent of the nation's proved natural gas reserves continue to be concentrated in the southwestern states, appreciable increases were recorded in the Rocky Mountain area, particularly in Colorado and Wyoming, according to Gas Facts, the statistical record book recently issued by American Gas Association.

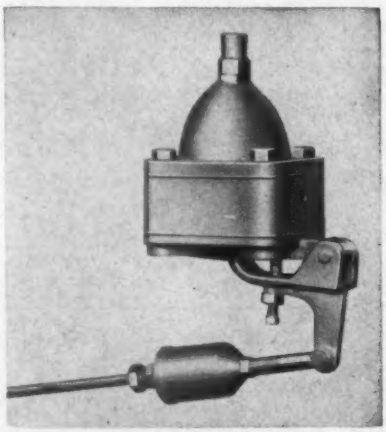
Estimated proved recoverable reserves in the Rocky Mountain area advanced from 2.3 trillion cu. ft. at the end of 1947 to 4.4 trillion cu. ft. at the end of 1948, a gain of 91 per cent.

Of the total proved reserves of 173.8 trillion cu. ft. estimated by the AGA Committee on Natural Gas Reserves at the end of 1948, the southwest area accounted for 128.7 trillion cu. ft. This figure represents a percentage gain of five per cent over 1947 estimates of 122.7 trillion cu. ft. in this area.

No gains in known natural gas reserves were estimated for the Appalachian and Pacific Coast areas and the estimate for the midwest area was one percentage point under the 1947 figure.

Ingersoll-Rand Brings Out New Speed Regulator

An improved regulator for its "drill-more capacity control" of portable compressors is described in a new Ingersoll-Rand folder. According to the manufacturer, this new



Floating speed regulator.

regulator is simpler in operation and easier to adjust than the original regulator which Ingersoll-Rand pioneered in 1939 and has since been used on all 105-cfm and larger portables. Speed steps and cycling are eliminated. Average air pressures are 15- to 20-psi higher, and savings in fuel are up to 40 per cent.

Whenever less than full capacity of the compressor is used, the new regulator slows down the compressor to the lowest practical working speed that compresses just enough air to hold the pressure. When the air demand changes again, the speed "floats" up or down to the exact speed required. The compressor capacity is varied throughout the entire speed range without speed steps or cycling.

For information write Ingersoll-Rand Company, 11 Broadway, New York 4.

Koppers Div. Appoints Three to New Positions

Myron T. Herreid, vice-president and general manager of the gas and coke division, Koppers Company, Inc., has announced the appointment of three men to managerial positions.

The three will work out of new headquarters in Pittsburgh.

Harold F. Ebken, formerly procurement manager for the Missouri-Illinois plant of the division at Granite City, Ill., has been named personnel manager for the division; M. W. Gaylord, formerly plant engineer for the division's St. Paul plant, has been appointed production manager; and J. E. Spears, control manager of the division, will continue in his present capacity.

Mr. Ebken joined Koppers in 1930 as a clerk in the executive offices, and was transferred to the Granite City plant in 1941.

Mr. Gaylord, a graduate in chemical engineering from Iowa State College, entered the employ of Koppers in 1939 as a cadet engineer at the St. Paul plant. He served with the Signal Corps for four years and after the war returned to St. Paul as plant engineer.

A graduate of the University of Pittsburgh, Mr. Spears joined Koppers in 1929 in the Pittsburgh accounting section. He served with the Navy during the war, and rejoined Koppers at its Kearny, N. J. plant.

Mr. Herreid also announced the appointment of C. J. Robb as accounting technician for the division's control section, and H. G. Schultz as production technician. Both were previously at Kearny.

Miss Curtin Is Home Service Aid at Binghamton

Miss F. Patricia Curtin has joined the Binghamton, N. Y., Gas Works and will assist home service director Miss Margaret Easley in developing the company's home economics program.

Miss Curtin received her bachelor of science degree in home economics from Syracuse University in June.

Standard Ass'n Announces Program for Annual Meet

An address by Karl T. Compton, chairman, Massachusetts Institute of Technology, and chairman, Research and Development Board of the National Military Establishment, will climax the four-day series of conferences at the annual meeting of the American Standards Association, October 11-14. Dr. Compton will speak at the annual luncheon on Friday, Oct. 14. The meeting is to be at the Waldorf-Astoria, New York.

Meetings of sectional committees and correlating committees will be held on Oct. 11. The company member conference will convene on Oct. 12, and the conference of executives of organization members of the ASA will meet Thursday morning, Oct. 13. Tentative plans for Thursday afternoon have been made to hear reports on international developments in standardization by representatives of the American delegation which attended the summer meetings of the International Organization for Standardization in Paris. The Standards Council will go into session on Friday morning, Oct. 14.

American Stove Announces New Appointments

President Arthur Stockstrom, of American Stove Company, has announced the following personnel changes made by the board of directors:

Marc W. Pender, vice-president in charge of sales, has been appointed to the board of directors.

Clark P. Fiske, treasurer, has been appointed to the board of directors and is now secretary and treasurer of the company.

W. B. McMillan, president of Hussmann Refrigerator Co., St. Louis, has also been appointed to the board.

Tom Gibbons, assistant advertising manager, is now advertising manager.

W. T. Trueblood, Jr., is sales promotion manager.

The changes resulted from the retirement of T. M. Sourbeck, a member of the board and manager of the company's Lorain, O., factory, at age 72; the retirement of George E. Baker from the board and from the office of secretary because of ill health; and the resignation of Lloyd C. Ginn as a member of the board and manager of the advertising and sales promotion department.

B. J. Mullaney, Retired, Dies in Paris

Bernard J. Mullaney, retired vice-president of The Peoples Gas Light and Coke Co., Chicago, died in Paris, France, on September 2.

Mr. Mullaney retired in 1937, after 20 years with the Peoples company. Born in Woodhull, N. Y., he became a reporter on St. Paul, Minneapolis and Chicago newspapers. He also served as commissioner of public works for Chicago.

Mr. Mullaney was prominent in activities of the American Gas Association for many years, and was elected AGA President in 1929.

Con-Edison Has Budget Plan for Heating Customers

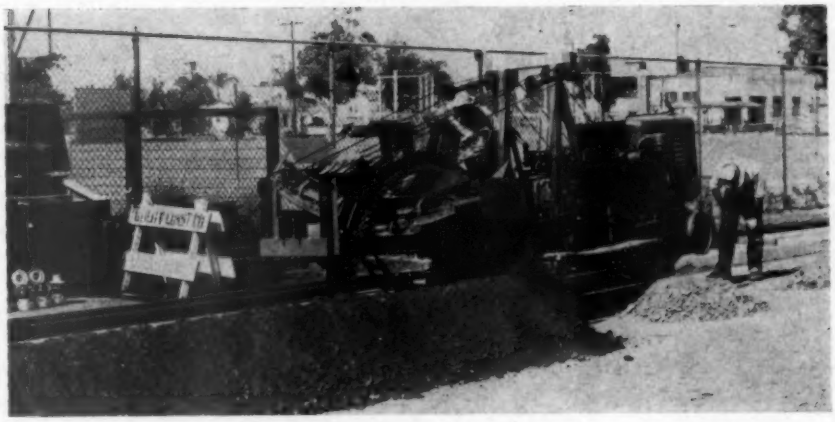
Consolidated Edison Co. of New York is offering to its gas heating customers a new simplified budget payment plan.

This plan, described in a brochure being mailed to customers, offers the opportunity to spread heating costs evenly over the ten-month period, September through June.

It is pointed out in the brochure that experience has shown that about 82 per cent of house heating fuel consumed during the heating season is used between November and March. This means larger gas bills during months when family expenses are usually heaviest.

Under the new plan customers can pay ten per cent of their estimated ten-month heating season gas costs each month. Thus monthly payments will remain constant and larger bills during peak periods are avoided.

All accounts will be squared off at the end of the heating season in July. Budget payments for existing installations will be based on analyses of gas consumption over past heating seasons. In cases involving new installations, monthly payments will be based on estimated consumption.



New Cleveland Trencher model in action.

Service Trenching Machine Developed by Cleveland

Engineered to fit present-day needs of utilities, a small, compact model of the "Baby Digger" trenching machine has been placed on the market by The Cleveland Trencher Co. Known as model "92", the new trencher is adapted for gas, water and sewer house services, etc.

Chief advantages claimed for "92" are its compact size— allowing easy maneuvering in tight places and quick moves from job to job on its rubber-tired tilt-bed electric-braked trailer—and its ditch capacities. Other new features are: clog-proof crawler tracks, operator-controlled power-shift conveyor giving control of the spoil bank, patented "Presto-Points" for quick and easy replacement of rooter teeth, and a crumbing shoe which can be swung up and away to permit digging up to foundations, walls and trees.

For illustrated folder giving specifications write The Cleveland Trencher Co., 20100 St. Clair Ave., Cleveland 17, for bulletin S-53.

Michigan Consolidated Gets Big House Heating Demand

Michigan Consolidated Gas Co. has received a spanking response to its public invitation early this month to prospective space heating customers to "come and get it." The company announced on August 1 in newspaper advertisements that the Michigan Public Service Commission on July 29 removed the restriction on the addition of new space heating customers which had been imposed in April 1946.

In the first three weeks after the bans were lifted, Michigan Consolidated accepted approximately 54,000 new applications. This means an increase of nearly 50 per cent over the 109,522 space heating customers who were on system lines at the end of 1948.

The addition of these new space heating customers gives Michigan Consolidated a space heating saturation rate of about 25 per cent of its 654,802 total number of customers.

The company's present rate for heating in Detroit is approximately 67 cents per 1,000 cu. ft. of 1,000 Btu gas. On this basis it is competitive with fuel oil at 7.5 cents a gallon and with coal at $14 a ton.

As against these competitive figures, home heating oil in Detroit is quoted at about 13½ cents a gallon, bituminous coal at $17.84 a ton, coke at $21.33 a ton, and anthracite coal at $21.80 a ton.

Natural gas prices in the Detroit area would have to go to 83 cents per 1,000 cu. ft. to equal prevailing prices for coal, to $1.00 to compare with coke and to $1.15 to equal oil heating prices.

FPC Dismisses Gulfcoast's Chicago Application

The Federal Power Commission has dismissed an application, because of failure to proceed with its prosecution, filed by Gulfcoast Northern Gas Co. in which it was proposed to construct a 1,184-mile pipe line from Texas to Illinois to supply gas to Natural Gas Pipeline Co. of America for resale in the Chicago area.

Top Executive Changes Made by Servel, Inc.

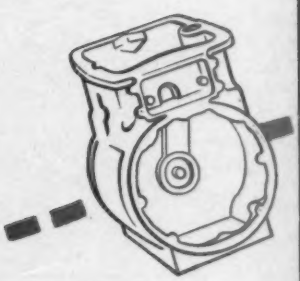
Louis Ruthenberg, formerly President of Servel, Inc., has been elected to the newly created office of chairman of the board of directors and chief executive.

W. Paul Jones has been elected President, general manager and director. Mr. Jones was vice-president of the Philco Corp.

Bryant Promotes Bissell to Promotion Manager

R. A. Bissell has been made sales promotion manager of Bryant Heater Division, Affiliated Gas Equipment, Inc., according to an announcement by J. N. Crawford, director of sales.

Mr. Bissell spent thirteen years with Brooklyn Union Gas Co., as district heating supervisor, and joined Bryant's New York factory branch in 1945. He has been with the Cleveland headquarters' office since December, 1948.



Continuous Machining—

PERFO

Know-How! . . . It is the most important ingredient in the fabrication of a product.

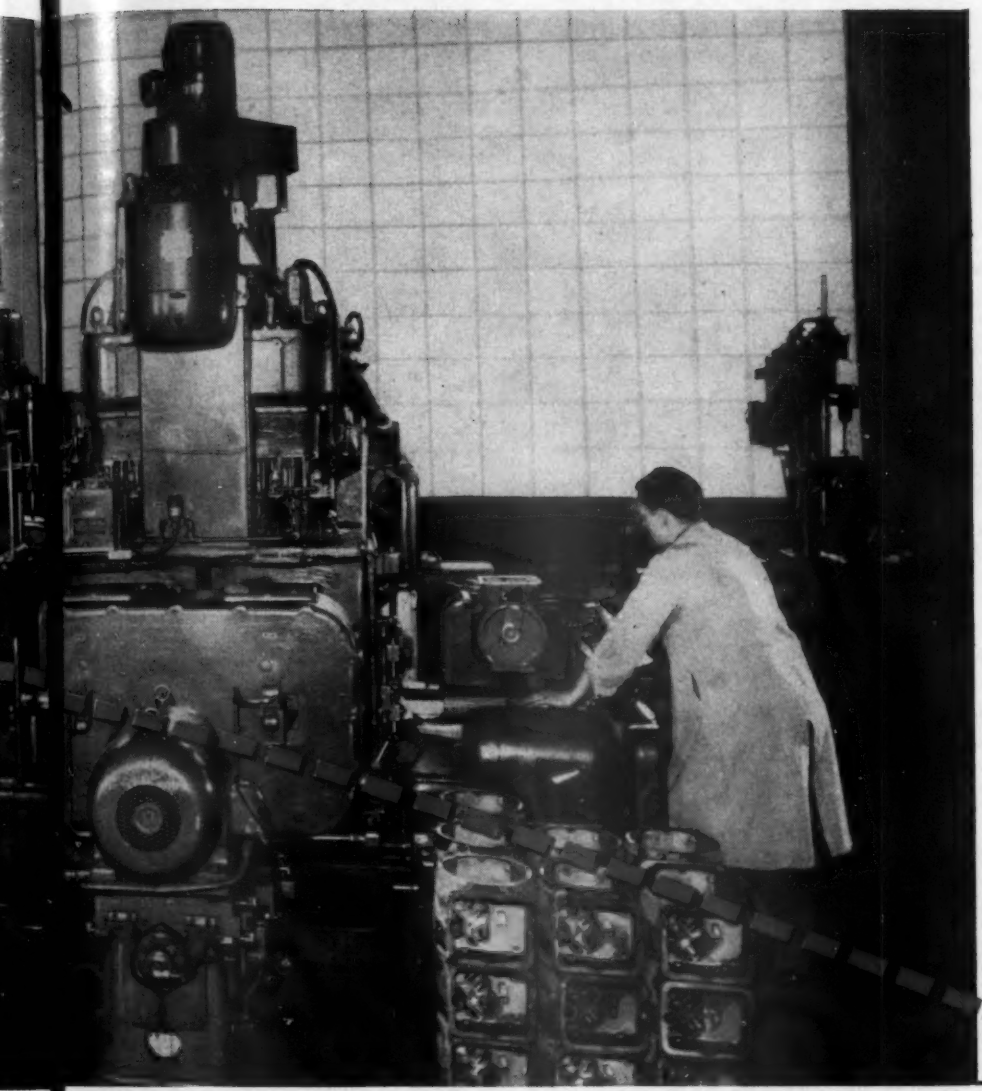
Its presence in the production of gas meters for measurement can be the one factor needed to secure (for users) a satisfying return on meter investment.

Know-how in American Meter Company is easily defined—it is based upon the experience and ability of experts who know *where* to make an improvement in meter design and construction . . . and *how* to do it.

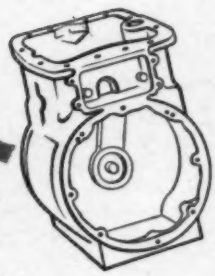
"American" know-how has made possible the elimination of many separate milling, drilling, and tapping operations by combining them in the single, "Progress-Through" machine pictured here.

"American" know-how designed the machine. "American" know-how supervised its construction. The meters which benefit from its super-accurate positioning of drills and taps inherit the know-how to give superior measuring performance—for year after year of service.

PRECISION MANUFACTURING



MORE THAN 100 PRODUCTION TOOLS *mill, drill and tap meter bodies which are held rigidly in moving fixtures. This new American Meter Company process provides undeviating accuracy for the positioning of the sub-assemblies which follow.*



One Reason Behind "American"

ORMANCE

AMERICAN METER COMPANY

INCORPORATED ESTABLISHED 1836

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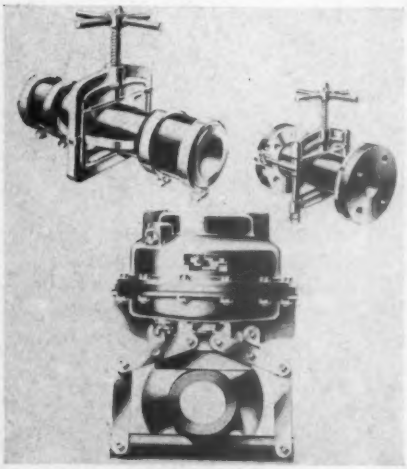
Atlanta • Baltimore • Birmingham • Boston • Chicago • Dallas
Denver • Erie • Fort Lauderdale • Houston • Joliet • Kansas City
Los Angeles • Minneapolis • Odessa • Philadelphia • Pittsburgh
San Francisco • Tulsa
In Canada—Canadian Meter Co., Ltd., Hamilton, Ontario

MEANS PRECISION PERFORMANCE

Flexible Valve Offers Three New Types

The Flexible Valve Corp. has released three new lines of valves—a slip-on type 7100 in sizes ½″ to 2½″ which mounts over



the ends of pipe, the flanged end type 7200 in sizes 1″ to 12″, and the diaphragm motor type in sizes 1″ to 10″.

The diaphragm type is used for remote control or instrument control. Operating air or fluid will close or open the valve as required. For very precise operation a valve positioner is used as standard.

Complete data for sizing, performance, etc., is contained in catalog 450. Copies can be had from Flexible Valve Corp., Palisades Park, N. J.

Central Hudson Wants to Lay Line for Natural Gas

Central Hudson Gas & Electric Corp., of Poughkeepsie, has asked the Federal Power Commission to authorize the construction of a 40-mile pipe line which would carry natural gas for distribution in Dutchess, Orange and Ulster Counties. Central Hudson now supplies this area with manufactured gas.

The proposed line would connect at Tuxedo, N. Y., with the line now being constructed by Home Gas Co., and would extend northerly to Central Hudson's plant in Poughkeepsie. Estimated overall cost of the line is $1,700,000.

Shifts at Pennsylvania and Southern Gas

George F. Wells, Jr., formerly general manager of the Pennsylvania and Southern Gas Co. properties, Westfield, N. J., has been transferred to the position of manager of two of the companies operating utilities, Valley Cities Gas Co., Sayre, Pa., and The Gas Light Company of Waverly, N. Y.

These properties are operated as a unit under the ownership and direction of the Pennsylvania and Southern Gas Co. Mr. Wells replaces D. C. Meyer, former manager of these companies who has resigned. H. Emerson Thomas, President of Valley Cities and the Gas Company of Waverly, will assume temporarily the duties of general manager of the holding company of which he is also executive vice-president.

Increased Capacity Approved for Kansas-Nebraska

The Federal Power Commission has authorized Kansas-Nebraska Natural Gas Co., Inc., of Phillipsburg, Kansas, to construct additional transmission facilities which will increase the capacity of the company's system to 140,000,000 cu. ft. of gas a day. Estimated cost of the construction is $2,339,457.

The company was authorized to construct 14 town-border measuring stations and approximately 301 miles of main, lateral and loop pipe lines, and to install new gas compressors with a total of 3,600 horsepower in existing compressor stations.

The authorization also included purchase by Kansas-Nebraska from Nebraska Natural Gas Co. of 15 miles of service line and 30 service connections with alfalfa dehydration plants.

J. N. Dodds, of Cleveland Trencher, Is Dead

John Nelson Dodds, 42, service engineer for the Cleveland Trencher Co., Cleveland, died in Cleveland on July 29 after a long illness.

Mr. Dodds had been with Cleveland Trencher for nine years, and was widely known throughout the gas industry.

Plans Shaping Up for Safety Convention in October

Talks by important business leaders in some of America's largest companies will highlight the program of this year's National Safety Congress and Exposition, to be held in Chicago October 24-28.

Nearly 12,000 persons are expected to attend the 37th annual convention of the National Safety Council.

On the program are Gustav Metzman, president of the New York Central System; James Tanham, vice-president for industrial and public relations of the Texas Co. and chairman of the board of directors of the National Safety Council; James E. Trainer, vice-president of Firestone Tire and Rubber Co.; and Earl E. Moore, vice-president for industrial relations of Carnegie-Illinois Steel Corp.

The Congress also will be addressed by Dr. Andrew C. Ivy, vice-president of the University of Illinois medical schools, who will discuss alcoholism in industry, and Maj. Gen. Philip B. Fleming, chairman of the U. S. Maritime Commission.

A feature of the Congress will be a labor-management safety symposium on what can be done by labor organizations and industry to reduce off-the-job accidents. Labor's viewpoint will be presented by James L. McDevitt, president of the Pennsylvania Federation of Labor, AF of L, and Harry Read, executive assistant to the secretary-treasurer, CIO.

There will be more than 200 Congress sessions and more than 500 program participants will take part in the discussions.

Sessions on industrial safety will be held at the Stevens, Congress and Morrison hotels. Commercial vehicle activities will be centered in the Palmer House. Traffic meetings will be held in the Sherman Hotel, where the public safety exposition also will be located.

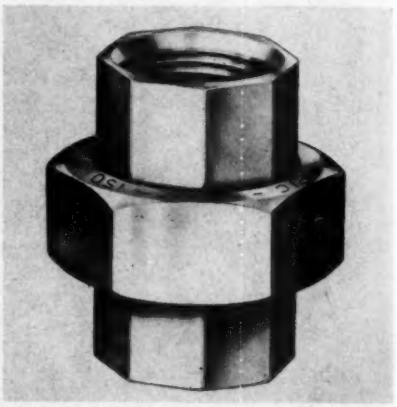
O. C. Stark Is Sales Manager of Photoswitch

Photoswitch Inc. has announced the appointment of Oscar C. Stark as general sales manager with headquarters in the factory sales office, 39 Broadway, New York.

Mr. Stark has severed his association with the Square D Company, with whom he had been connected in various capacities since 1930.

New Gas Service Union Made of Steel Coupling Stock

Claimed to be particularly well adapted for gas company use, a new patented union for gas services has ends of steel pipe coupling stock to assure sturdiness and nonporosity. It is zinc-plated throughout to give rust and corrosion protection. To



speed installation in restricted working quarters, the ends are multiple sided so that an open-ended wrench can be used.

This new steel union is manufactured by E. M. Dart Manufacturing Co., Providence.

Worthington Announces Change in Dual Fuel Diesels

Greater efficiency and smoother operation over a wide load range are claimed for the new dual plunger fuel pump and automatic thermal air control, now standard equipment on dual fuel diesels built by Worthington Pump and Machinery Corp.

The dual plunger fuel pump incorporates in one unit the requirements for a pump to handle the full load of the engine on oil operation, and at the same time provides for handling the small quantity of pilot oil for burning gas fuel.

A small diameter pilot plunger, mounted in tandem with the main plunger, produces atomization with short, localized penetration into the combustion chamber, resulting in lower firing pressures. Lower exhaust temperatures and improved fuel consumption indicate more efficient combustion.

Automatic thermal air control provides the correct air fuel ratio in direct relation to all load changes. Engine exhaust temperature is utilized to actuate this control.

Daily and seasonal ambient air temperatures can be compensated for by adjustment of the controller setting.

Complete descriptive bulletin, No. S500-B45 is available from Worthington Pump and Machinery Corp. Harrison, N. J.

Plans Are Filed to Extend Natural Gas Service in Central Pennsylvania

The Manufacturers Light and Heat Co., of Pittsburgh, has asked the Federal Power Commission to authorize construction of pipe line facilities which would be used for the transportation of natural gas to distribution companies serving Harrisburg, Allentown, Bethlehem, Reading and Lancaster.

Manufacturers, a subsidiary of Columbia Gas System, is proposing to connect with the pipe line systems of Allentown-Bethlehem Gas Co., The Harrisburg Gas Co., Consumers Gas Co. and Lancaster County Gas Co. In addition, the project includes construction of metering and regulating stations, and 1.5 miles of 10-inch line between Manufacturers' system and the Texas Eastern Transmission "Big Inch" line. Estimated cost is $232,000.

CONVENTION CALENDAR

September

19-21 *National Butane-Propane Ass'n.*, St. Louis, Mo.
26-28 *Controllers Institute of America*, San Francisco, Calif.

October

7 *Oklahoma Utilities Association Gas Division*, Biltmore Hotel, Oklahoma City, Okla.
11-14 *American Standards Ass'n.*, Annual Meeting, Waldorf-Astoria, New York.
13-14 *Texas Mid-Continent Oil & Gas Ass'n.*, Annual Meeting, Rice Hotel, Houston, Texas.
17-20 *American Gas Ass'n.*, Annual Convention, Chicago, Ill.
24-28 *National Safety Congress*, Morrison Hotel, Chicago, Ill.
26-28 *National Metal Trades Ass'n.*, Palmer House, Chicago, Ill.
31 *Independent Natural Gas Ass'n. of America*, Annual Meeting, Baker Hotel, Dallas, Texas.

November

7-9 *American Petroleum Institute*, Stevens Hotel, Chicago, Ill.
21-23 *Wisconsin Utilities Ass'n.*, Annual Meeting, Milwaukee, Wisc.
27-Dec. 2. *American Society of Mechanical Engineers*, Annual Meeting, New York, N. Y.

December

4-7 *American Society of Refrigerating Engineers*, Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.

January

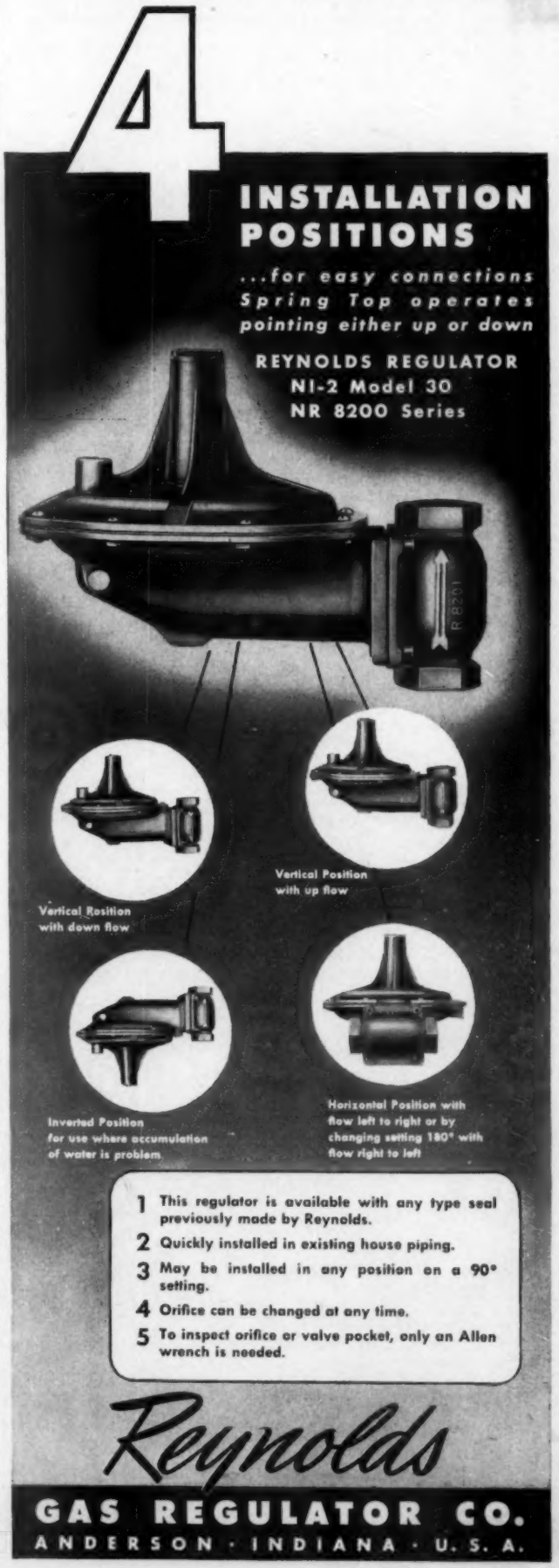
30-31 *Joint AGA-EEI Planning Meeting*, Netherland Plaza Hotel. Cincinnati, Ohio.

Use UNITED Services for Plant Development

Design
Construction
Operation

UGI EQUIPMENT

UNITED ENGINEERS & CONSTRUCTORS INC
PHILADELPHIA, PA.


4
INSTALLATION POSITIONS
...for easy connections
Spring Top operates pointing either up or down
REYNOLDS REGULATOR
NI-2 Model 30
NR 8200 Series
R-8201
Vertical Position with down flow
Vertical Position with up flow
Inverted Position for use where accumulation of water is problem
Horizontal Position with flow left to right or by changing setting 180° with flow right to left
1 This regulator is available with any type seal previously made by Reynolds.
2 Quickly installed in existing house piping.
3 May be installed in any position on a 90° setting.
4 Orifice can be changed at any time.
5 To inspect orifice or valve pocket, only an Allen wrench is needed.
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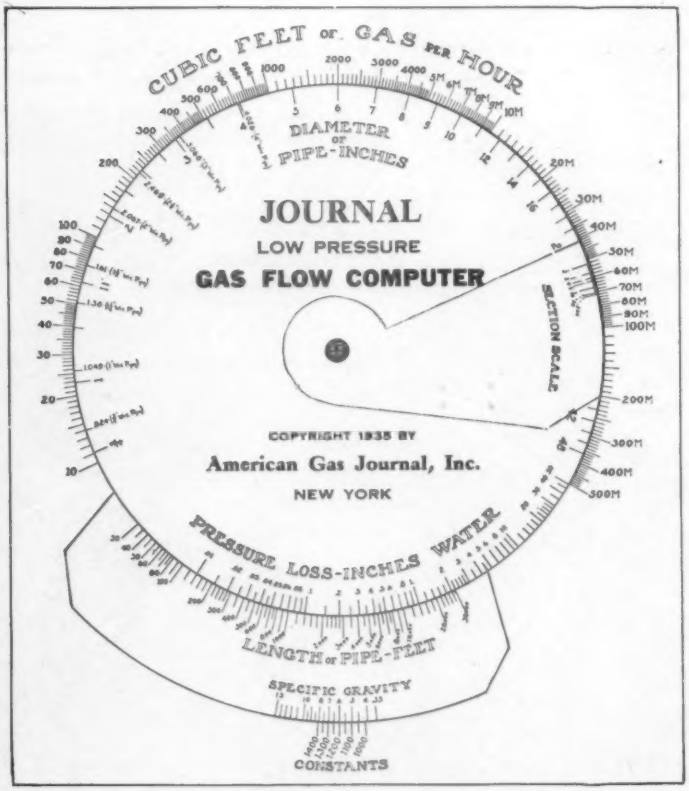

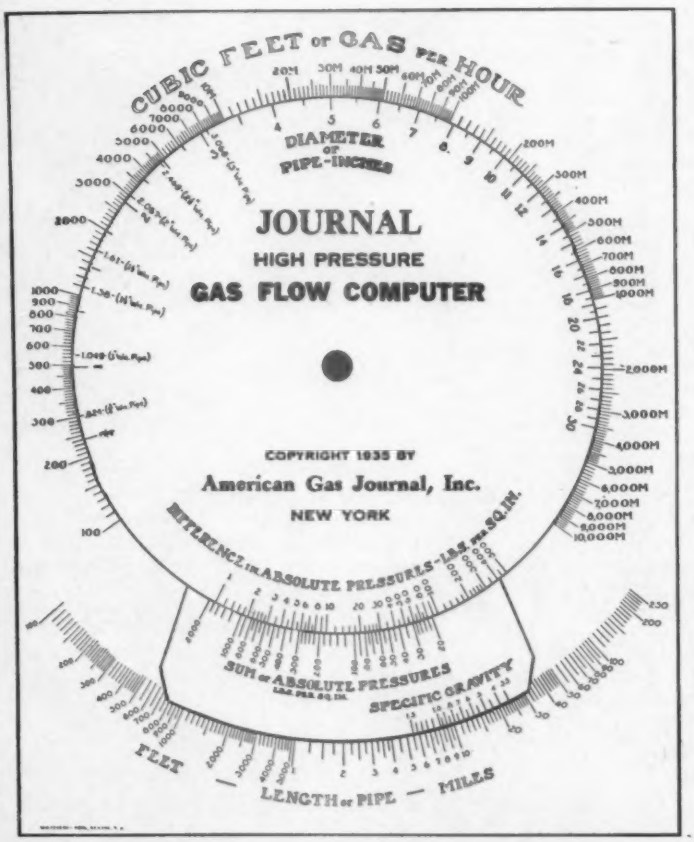

JOURNAL
Gas Flow
COMPUTERS

For Low Pressures:

Cubic feet of gas per hour	10 to 500 M
Pipe diameters	¾" to 48"
Pressure loss (inches)	.01 to 10
Specific gravities	1.5 to .35
Constants	1400 to 1000
Pipe length (feet)	30 to 30,000
Price	$4.00

For High Pressures:

Cubic feet of gas per hour	100 to 10 MM
Pipe diameters	¾" to 30"
Difference in absolute pressure to	500 psi.
Sum of absolute pressures	20 to 2,000 psi.
Specific gravities	1.5 to .35
Pipe length (feet)	100 to 5,000
Pipe length (miles)	1 to 250
Price	$4.00

The computers are printed on heavy durable plastic, enclosed in leatherette case with complete instructions for their use.

Published and sold only by:

AMERICAN Gas Journal
ESTABLISHED 1859

205 E. 42nd Street,
New York 17, N. Y.

New Procedures Speed Testing at AGA Laboratories

Several important steps designed to help meet the heavy demands of an unprecedented gas appliance test load recently were initiated by the American Gas Association Testing Laboratories.

During the second quarter of 1949 appliance testing operations continued the upward trend of the past few years and reached a new all-time peak. This increased activity is believed to be caused by keener competition resulting in increased development work, design changes to reduce manufacturing costs, availability of gas for heating over wider geographical areas and new heating methods developed to meet new building designs.

The trend was reflected in the fact that central and space heating testing accounted for more than one-half of the test load, which increased 19.6 per cent over the first quarter of the year. At the Cleveland Laboratories central and space heating testing have been operating on extra shifts for the past six months.

Since facilities of the Los Angeles Laboratories were enlarged last fall, they are in an improved position to give prompt service to manufacturers in that area. Consequently these facilities are being made available to more manufacturers to help meet the large test load. Temporarily manufacturers located between the Mississippi River and the Rocky Mountains have been offered the option of shipping their equipment to the Pacific Coast Branch for test. The normal geographical boundary is the Rocky Mountains. Factory inspections for manufacturers located in the intermediate zone will continue to be conducted by Cleveland inspectors as in the past.

Likewise a new policy on the shipment of appliances for test has been adopted with the expectation that it will benefit both the Laboratories and manufacturers. Appliances are now being accepted on a reservation basis for a date not to exceed three months whereas formerly they were tested in the order of their actual receipt at the Laboratories.

Under the new arrangement manufacturers may advise by letter of the date when they expect to deliver their appliances to either the Cleveland or Los Angeles Laboratories. The earliest test date available is then assigned and the manufacturer requested to have the appliance on hand one week prior to this tentative date.

Laboratories procedures and methods in general have been thoroughly reviewed and adjustments made for providing the best possible service. Among them was the appointment of a chief methods engineer. The position was created to provide closer coordination between the formulation of gas appliance standards and the translation of these standards into test methods employed in the approval program. The Chief Methods Engineer will supervise all requirements investigations assigned to the Laboratories. As new test methods are adopted by the Approval Requirements Committee he will assist in placing them in effect as standard procedure.

Test fees, which are closely supervised by the Laboratories Managing Committee, recently were revised by it in line with current experience. A new schedule of fees was adopted, effective July 1, and distribution made to all interested manufacturers. Principal changes made included reductions in test fees for central heating appliances and increases in those for hotel ranges and accessories, both of which were not changed in 1941 when all other test fees were increased.

Four New Mixed Gas Research Reports

Four new mixed gas research reports prepared under the direction of the Gas Production Research Committee of the American Gas Association have been issued by the Testing Laboratories. Published under the PAR Plan, the reports provide detailed information on interchangeability of manufactured gases. Each gives in handbook form the compositions of substitute gases which in practical operation may be interchanged with the base gas.

The reports released are as follows:

Report 1106-A — Interchangeability of Other Fuel Gases with Coke Oven Gas, $1.50.

Report 1106-B — Interchangeability of Other Fuel Gases with Carburetted Water Gases, $3.00.

Report 1106-C — Interchangeability of Other Fuel Gases with a Mixed Coke Oven—Carburetted Water Gas, $1.50.

Report 1106-D—Interchangeability of Carburetted Water Gases with a Mixed Natural Gas—Blue Gas—Cracked Natural Gas—Producer Gas, $1.50.

Here's your purification material

CONNELLY IRON SPONGE

HIGHER EFFICIENCY

- Iron Sponge contains a highly active oxide with maximum capacity.
- Specially made shavings and patented chip filler available for less resistance and longer service.
- Connelly has developed the perfect, enduring alkali for all conditions.
- Suitable for high or low pressure purification.

HIGHER ECONOMY

- Reduces purifying costs because of more H_2S absorption with better and longer trace removal.
- Lowers operating and maintenance costs.

If you have a problem in gas purification, Connelly's 74 years' experience is available to you. Write for full details today.

CONNELLY Inc.

3154 S. California Ave., Chicago 8
Elizabeth, N. J., Los Angeles, Calif.

"The Gem of Them All"

COLUMBIA CONVERSION GAS BURNERS

More Popular Than Ever With Home Owners and Dealers

DEALERS SAY—Columbia Nutipe Burner has a common sense design. Closely duplicates operation of appliance when solid fuel was used. Easy to install. Seldom requires service.

HOME OWNERS SAY—Gives quick heat transfer and earlier delivery of heat to rooms. Has tamper-proof controls and quiet operation.

MODEL P-ZE

shown here is designed for use in warm air furnaces or round type boiler where grates are removed.

Send for free folder giving complete instructions for installing

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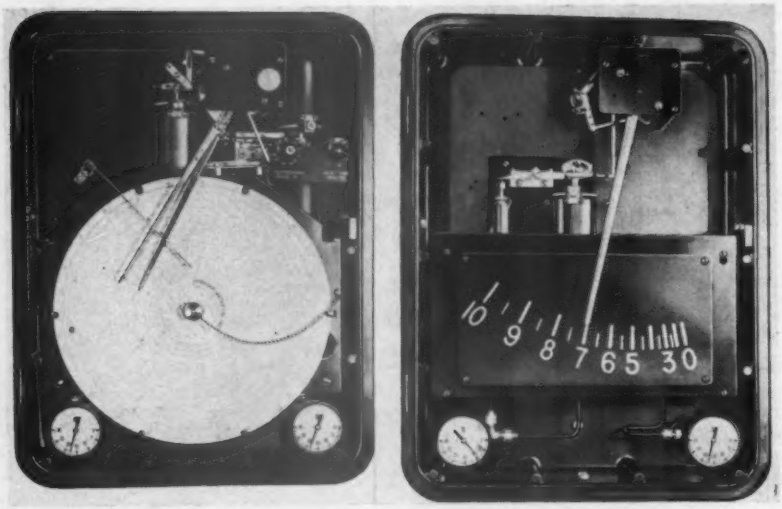

At the left is the proportional reset controller receiver of American Meter Company's new series A-88. At the right a pneumatic transmitter is pictured.

American Meter Brings Out New Pneumatic Instruments

American Meter Company has announced their new Series A-88 pneumatic instruments for transmitting and controlling flow, pressure, liquid level, and specific gravity.

These instruments have been designed with the cooperation of operating instrument engineers to provide accurate, dependable performance combined with simplicity and ease of maintenance. Numerous features requested by the process industries were designed and developed by the manufacturer's research division and proved in field applications.

Problems of maintenance and service have been simplified by reducing the number of pivot points and moving parts to a minimum. By unitizing sub-assemblies and standardizing parts, a high degree of interchangeability has been achieved, making the instruments convertible to changing conditions and applications.

Other advantages which have been suggested by the industry and incorporated in the Series A-88 instruments include a positioning device which simplifies linkage alignment in the field; a spring-closing, bellows-sealed reset valve calibrated according to time; and a nozzle assembly which permits adjustment of the nozzle without breaking tubing connections.

The company also pointed out that the relay includes a damping device for smooth operation and is equipped with a self-cleaning primary orifice and a by-pass arrangement which permits changing to manual control by turning one screw.

In order to further simplify operation, the instruments are arranged so that they can be reversed by shifting one end of one link without disturbing other adjustments.

Complete information on the Series A-88 Instruments is given in Bulletin CT-49.

Cribben and Sexton Makes Personnel Shifts

A. T. Carrow has been appointed midwest sales division manager of Cribben and Sexton Co., Chicago, according to an announcement by Harold E. Jalass, vice-president and general sales manager.

J. G. Schellenberg, who formerly held this position, has been transferred to the control division as central division sales manager.

Mr. Carrow will have headquarters in Omaha, while Mr. Schellenberg will continue at the Chicago office.

Water Heater Service Manual Revised by AGA

In recognition of progress made in the design of gas water heaters and their controls since 1938, a revised and expanded third edition of the "Gas Appliance Service Water Heater Manual" has been completed by American Gas Association. Containing suggestions for properly installing and servicing gas water heaters, the manual is a reference for training purposes and for servicemen in the field.

Preparation of the new volume was undertaken by AGA Committee on Gas Appliance Installation and Service Manuals, J. M. Pickford, Northern Indiana Public Service Co., Hammond, Ind., chairman. The manual includes information helpful to persons in the LP-gas industry. Most of the service material is applicable to all types of gases.

Part IV dealing with the specific servicing instructions for individual heaters and controls has been expanded, and contains equipment instructions for 19 water heater manufacturers and 11 control manufacturers. Of these, 20 are represented for the first time, while material for 10 has been brought up to date.

Published in pocket-size and containing 296 pages with 167 illustrations, the manual is available from AGA at $1.50 a copy.

Basalt-Kaiser Will Produce Large Steel Pipe

A manufacturing and sales agreement which will increase West Coast production of large diameter steel pipe has been made by Kaiser Steel Corp. and Basalt Rock Co.

Henry J. Kaiser, president of Kaiser, and A. G. Streblow, president of Basalt, said that the Basalt plant located at Napa, Calif., on San Francisco Bay, which presently produces standard sizes of electric resistance weld steel pipe ranging from 8 5/8" to 20", is adding facilities to enable it to produce expanded electric fusion weld steel pipe up to 36".

Plate for the pipe will be supplied from the Kaiser Steel mill at Fontana, Calif. Operations begin early in 1950.

Kaiser Steel is now building a new electric weld mill at Fontana to produce pipe in sizes ranging from 5 9/16" to 14". Kaiser is already producing at Fontana continuous weld pipe in sizes ½" to 4".

CRUSE-KEMPER COMPANY

AMBLER, PENNA.

MORE THAN FORTY-FIVE YEARS OF SOUND

STEEL PLATE CONSTRUCTION

GAS HOLDERS **PURIFIERS**

Bristol Publishes Bulletin on Combustion Safeguard

The Bristol Company has published a bulletin, No. W1816, on its new combustion safeguard, known as the "Electronic Pyrotrol." The new bulletin describes the application of the Pyrotrol in protecting gas-fired ovens, furnaces, kilns, boilers, dryers, kettles, and other similar industrial heating equipment from the danger of gas explosions during ignition, operation, and shut-off.

Copies of the bulletin are available from The Bristol Company, Waterbury 91, Conn.

Charles C. Brooks Represents Pressed Steel in Southeast

Charles C. Brooks has been appointed southeastern representative of the Pressed Steel Tank Co. of Milwaukee, according to Norman A. Evans, vice-president in charge of sales.

With headquarters in Atlanta, Mr. Brooks will serve the entire southeastern territory.

White-Rodgers Electric Co. Opens Detroit Branch

The White-Rodgers Electric Co., makers of automatic controls for heating, air-conditioning and refrigeration, has announced the opening of a branch office at Detroit. Charles M. O'Brien is Detroit district manager.

White-Rodgers with home office at St. Louis also maintains branch offices in New York and Chicago with resident sales engineers in principal cities.

General Controls Appoints Sales Promotion Manager

W. E. Conkright has been appointed sales promotion and advertising manager of General Controls Co., Glendale, Calif., according to J. F. Ray, vice-president in charge of sales.

Mr. Conkright has had long experience in industrial advertising and promotional fields.

Mr. Ray also announced the opening of a new factory branch office in Cincinnati, to be headed by Jack Prutow, branch manager.

The company's Oklahoma City office has been moved to Tulsa.

Positive Displacement Blower Developed by Standardaire

Standard Stoker Co., Inc., has announced that a new type of positive displacement blower is now in production at its Erie, Pa., plant following an extensive period of re-

search. The blower is available in capacities from 100 to 15,000 cfm and for pressures up to 20 pounds.

Unique features claimed are quietness of operation, reduced weight and compactness. The 2000 cfm blower weighs approximately 1000 lbs. The blower lends itself to direct drive by standard motors.

C. W. Woltz Now in Texas for Cooper-Bessemer

Clifton W. Woltz, Cooper-Bessemer Corp. sales engineer, has been transferred from the company's headquarters at Mount Vernon, Ohio, to the Dallas branch office. Mr. Woltz will continue in the capacity of sales engineer in the Texas area for all types of gas, diesel engine and compressor installations.

New Safety Catalog

The 1949-50 issue of "Everything In Safety," E. D. Bullard Company's catalog of personal protective equipment and industrial safety devices, is divided into five sections: first aid, respiratory protection, eye protection, hats, belts and clothing, miscellaneous safety equipment.

Requests should be sent to the company, 275 Eighth St., San Francisco 3.

Bryant Resumes Service School at Cleveland

To keep its distributor-dealer organization informed as to the newest developments in product design and service, Bryant Heater Division recently conducted the first of a continuing series of three-day service schools at its headquarters in Cleveland, Ohio.

The course deals with the fundamentals of heating, analysis of gases, adjustment and servicing of heating controls, and servicing and installation of Bryant equipment.

Rockwell-Emco Appliance Regulators Described

Pittsburgh Equitable Meter Division has issued a completely revised bulletin describing their line of gas appliance regulators and allied equipment.

This bulletin is divided into three sections. Section one is devoted to aluminum body regulators, sizes ⅛ in. through 1¼ in. Section two describes the company's line of double valve, iron body regulators, sizes 1½ in. through 3 in. Complete specifications, cut-away views showing construction details and performance curves are given for each type and size of regulator. Section three is devoted to other Rockwell-Emco equipment of interest to those working with gas appliances.

To obtain a copy write Pittsburgh Equitable Meter Division, Rockwell Manufacturing Co., Pittsburgh 8, for bulletin 1036.

A. F. H. Scott Is Southwestern Manager for South Wind

Allison F. H. Scott, formerly with the Federal Housing Administration in Washington and long active in the heating industry, has been appointed southwestern regional manager of the South Wind domestic heating equipment division of Stewart-Warner Corp. He will have headquarters at Dallas, according to H. W. Milner, sales manager of domestic heating equipment.

Mr. Scott is an engineering graduate of the University of Wisconsin. Prior to overseas service as a colonel in the Anti-Aircraft Artillery he had been with the American Radiator Co. in New York, was special assistant to the deputy administrators of Titles I and II of the Federal Housing Administration and vice-president and general sales manager of Hoffman Specialty Co.

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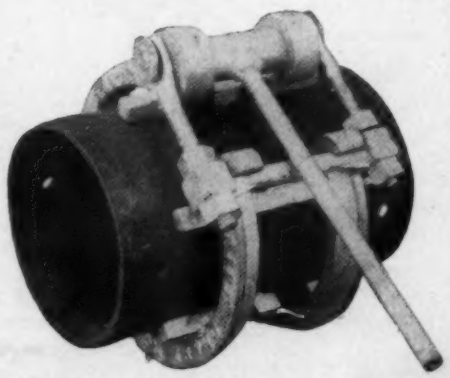

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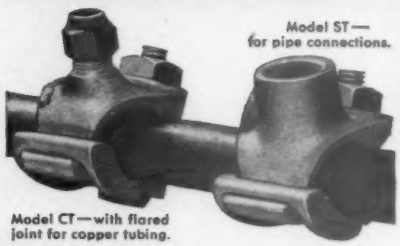

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Trying It on For Size?

Convincing proof of the compactness of the new small gas-fired boiler recently brought out by Iron Fireman Manufacturing Co. It measures 13 by 13 by 26 in.

Duo-Therm Announces Sales and Advertising Change

Karl Egeler has been appointed sales manager of the Duo-Therm Division of the Motor Wheel Corp., Lansing, Mich. Louis C. Vandertill has been appointed advertising manager, Mr. Egeler's previous post, according to an announcement by M. F. Cotes, executive vice-president.

Negligence Defined

(Continued from page 30)

hired, paid and controlled by Smith. This court said:

"Generally, where one lets work to be done by another, reserving no control over the performance of the work, he is not liable to third persons for injuries resulting from the negligence of the contractor or his workmen."

Hence, under ordinary circumstances officials may safeguard a gas corporation against liability by employing a contractor to do a job with the understanding that the contractor will select, employ, pay and direct the employes what to do and how to accomplish the job. Such an arrangement is legal where the contractor signs a contract to perform specified work within a stipulated period of time and at a definite price.

City Solely Liable

According to a recent higher court a city is solely responsible for injuries caused by defective sidewalks.

For example, in Molis v. City of Duluth, 32 N. W. (2d) 147, the testimony showed facts, as follows: One Handris was the owner of property in a city. A pedestrian was injured when she fell on the sidewalk in front of the Handris property. She sued the property owner and the city for damages.

During the trial the testimony proved these facts: Handris installed gas pipes under the sidewalk in front of his premises. The city took care of the curb service, that is, from the main to the curb. The city had nothing to do with the installation from the curb box to the private property, except to see that the installation is properly made and that the right kind of material is used. A permit was granted for excavating at that point. Ten dollars was deposited to guarantee that the place would be cleaned up and the sidewalk left as it was when the work was begun. After the work was completed, an inspector of the public works department of the city reported to the office that the sidewalk and ground had been restored and the $10 deposit was returned.

Notwithstanding these facts the injured pedestrian proved that the repaired sidewalk was defective and resulted in her injury. The higher court absolved Handris from all liability, saying:

"The city admits, as it must, that it could be held negligent in permitting the condition to remain. The duty of repairing and maintaining a sidewalk lies with the city."

Floor Furnace Venting

(Continued from page 19)

to the ground by reducing the depth of the floor furnace. Many dealers now stock only this new type instead of considering it suitable for special applications. The trade must be warned that every inch reduction in the distance between the bottom of the floor joist and the draft diverter vent pipe opening means a reduction of *two feet* in the permissible length of the lateral vent pipe.

It may be thought that we have dwelt at undue length on the single item of floor furnace venting installations. It is because we know the damage that is being done to the floor furnace industry by inadequate venting and being in the gas industry we are well aware that injury to any part hurts the entire industry. Let's help the floor furnace maintain its rightful place on our list of appliances.

In our final article we will discuss the space heater and special applications. After all, there are more space heaters being used than all the rest of the heating appliances put together.

Conferences Bring Out Ideas

(Continued from page 28)

too-talkative people, stopping whispered asides, and keeping the group on the subject).

This situation may become sufficiently serious to necessitate a change in the workaday relationship between leader and group members. Frequently I have noted sharp improvement in the quality of conferences conducted by an executive after he has tightened up or slacked off a bit in matters of organizational discipline. A good supervisor invariably can become a good conference leader when the group is made up of his own subordinates.

10. In closing any discussion, make a final summation of the two or more schools of thought which have developed, and then immediately secure consensus by calling for a showing of hands. Announce the group's decision and thereafter close discussion on this subject for that meeting. Do not permit useless and pointless "post mortems." If possible, assure the group that their majority decision on the matter just discussed will be put into effect. There is no finer motivation for future conferences than the group's sure knowledge that their decisions in any discussion are carrying weight.

In any sales conference the entire period may be devoted to discussion of a single question, or more than one problem may be solved. The important thing is not to attempt to cover too much ground in a single conference. One worth-while subject properly threshed out will justify the time consumed in any sales conference.

It is taken for granted that public speakers must be trained as orators, and it is not difficult to appreciate that conference leaders also can learn new techniques which will improve the quality of their discussion meetings.

What is not so well understood, however, is that conference groups, unlike a speaker's audience, actually must be taught by the leader to confer properly. Therefore, for the first three conferences of any series the leader's objective should be that of training his group so to confer. Most of the suggestions listed above are intended to help in attaining this goal.

If the sales executive happens to be leading conferences with a number of groups, it may be that this training in proper methods of participation may be speeded up if he will issue to the members of any group, at the first conference of a series, the following "rules of order" typed on a slip of paper.

Conference Rules of Order

1. The leader has no ideas to present to the group. All decisions will represent the consensus of the group.
2. Everyone is expected to participate in the discussion freely and voluntarily, but no one will be called on for an opinion.
3. Talk one at a time. Please refrain from private conversations, out of courtesy to the man who has the floor.
4. Express your opinions briefly.
5. We expect a difference of opinion, but no one should get angry if others differ with his opinions.

After a group has had an opportunity to study these typed suggestions for a few moments, it is much easier to eliminate such distractions as verbosity and wandering from the subject simply by referring to the rule of order that has been overlooked by the individual group member.

Pressure Reading Device

(Continued from page 23)

leakage of gas through the top of the device.

The manometer is attached to the external adaptor or test plug on the adaptor (7) and the pressure reading is taken. The procedure is repeated in reverse to replace the pipe plug and seal the service pipe. The device is then removed.

To date approximately 25 instruments, based on Mr. Sawicki's original design have been made and are being used by service personnel, and are expediting and facilitating gas pressure reading jobs.

Under average conditions it is estimated that these instruments will be used about 2,000 times a year. Customers' service no longer has to be interrupted; nor do appliances, as a result, have to be serviced. An annoyance to customers has been eliminated.

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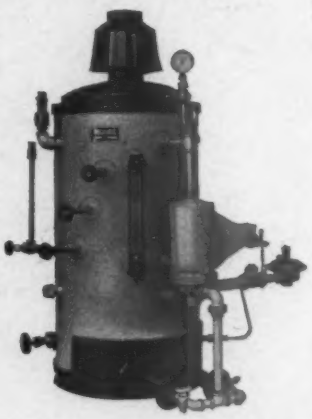

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